



# BOOK OF LEARNING OUTCOMES



**SIKSHA 'O' ANUSANDHAN**

(Deemed to be University)

Khandagiri Square, Bhubaneswar - 751030, Odisha, India

**REGISTRAR**  
**SIKSHA 'O' ANUSANDHAN**  
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# 1 Introduction

Now-a-days, Outcome Based Education (OBE) is being widely used by all the leading institutions across the world. OBE is a student-centric educational model that maps & measures students performance at every step. The OBE model aims to maximize student learning outcomes by developing their knowledge & skills. The outcome-based education system, also known as standard-based education, has proven to be effective in assisting institutions in measuring their learning outcomes while also allowing students to develop new skills that will help them stand out among their global peers.

The traditional educational system, on the other hand, is heavily reliant on theoretical aspects of learning. It repeats the mundane teaching-learning process, which focuses solely on students memorization skills rather than their development. It doesn't give students much of a chance to learn new skills that could help them advance in their careers. Teachers in a traditional system are more concerned with completing the curriculum within the allotted time frame than with innovating. Outcome Based Education System is explained in Figure 1.

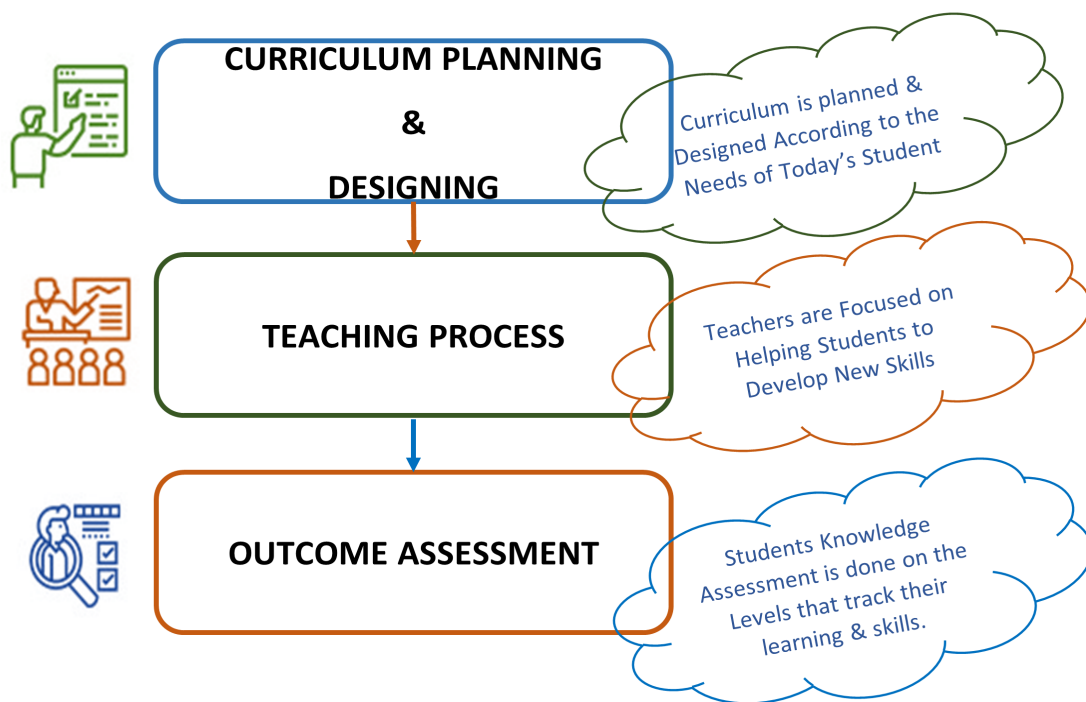


Figure 1: Outcome Based Education System

The Outcome Based Education is started with the curriculum design and ended with the outcome assessment. The assessment methodology ensures continuous improvement as shown in Figure 2.

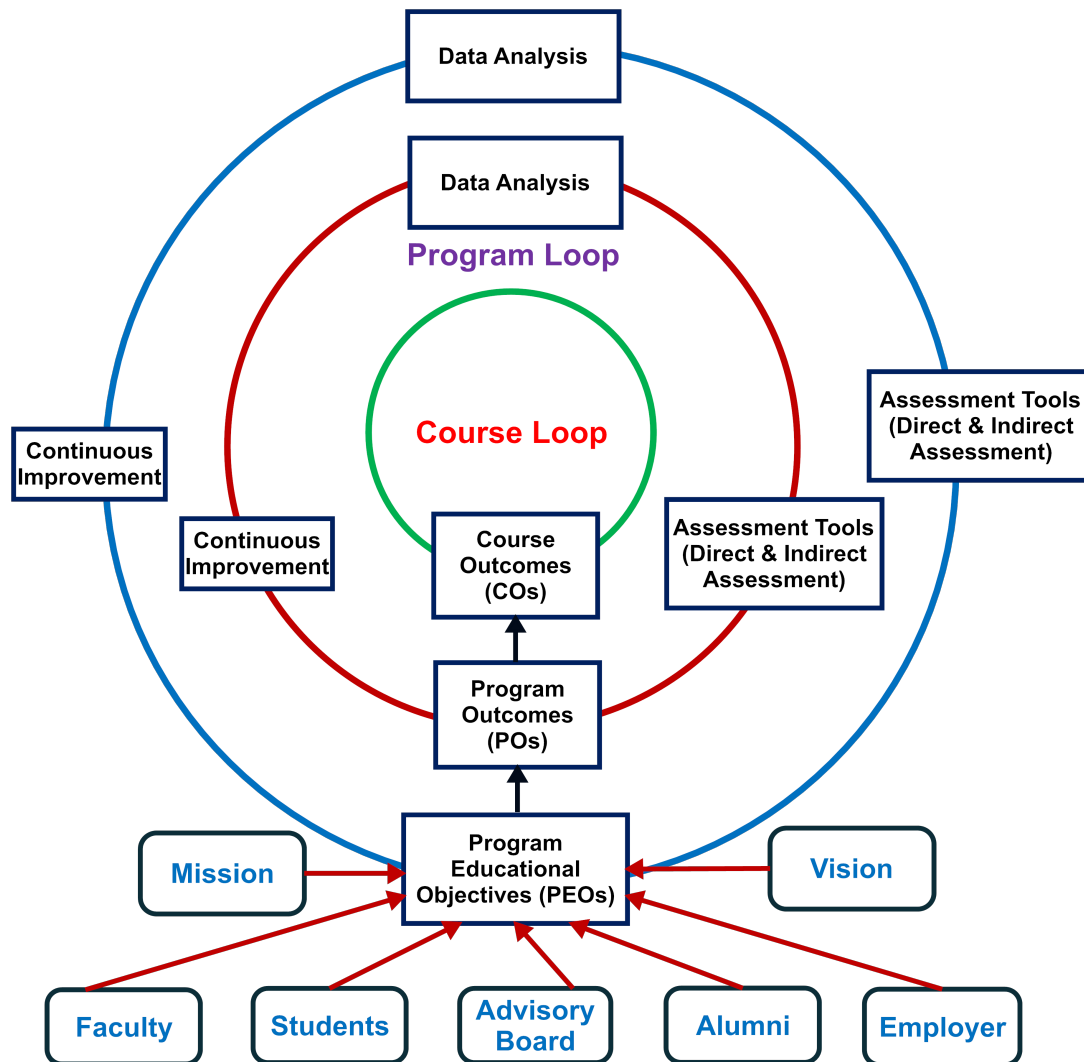


Figure 2: Program Assessment Methodology

The PEOs are generally formulated based on the suggestions received from various stake holders namely faculty, students, alumni, advisory board, employer and keeping eye on ‘Mission & Vision’ of the institution. Similarly, Program Outcomes (POs) are defined by aligning with the PEOs. POs are related to the skills, knowledge, analytical ability, attitude and behavior that students acquire through the program. The POs essentially indicate what the students can do from subject-wise knowledge acquired by them during the program. As such, POs define the professional profile of a graduate.

## 2 Engineering Program

### 2.1 Program Outcomes for Engineering Program

The following POs are defined in line with the accredited body like NBA/ Washington Accord.

- PO1. **Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO2. **Problem Analysis:** Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.
- PO3. **Design/Development of Solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO4. **Conduct Investigations of Complex Problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions for complex problems:
1. that cannot be solved by straightforward application of knowledge, theories and techniques applicable to the engineering discipline as against problems given at the end of chapters in a typical text book that can be solved using simple engineering theories and techniques;
  2. that may not have a unique solution. For example, a design problem can be solved in many ways and lead to multiple possible solutions;
  3. that require consideration of appropriate constraints / requirements not explicitly given in the problem statement such as cost, power requirement, durability, product life, etc.;
  4. which need to be defined (modelled) within appropriate mathematical framework; and
  5. that often require use of modern computational concepts and tools, for example, in the design of an antenna or a DSP filter.
- PO5. **Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

- PO6. **The Engineer and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO7. **Environment and Sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO9. **Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO12. **Life-long Learning:** Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.

Along with the POs, some programs are self defining their specific outcomes namely Program Specific Outcomes (PSOs) to satisfy Program Educational Objectives. Similarly, the following POs are additionally proposed along with the POs listed above by the Accreditation Bodies for post graduate program.

- (a) An ability to independently carry out research /investigation and development work to solve practical problems.
- (b) An ability to write and present a substantial technical report/document.
- (c) Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

Course Outcomes (COs) are described keeping view on students expectation at the end of graduating period. These are related to the skills, knowledge and behavior that students acquire in their progress through the course. COs are defined for each course

of a particular program of study and finally, each CO is mapped with the POs of the concern program to measure the attainment score of POs. The attainment score of POs describe the accomplished level of PEOs. The mapped matrix of COs with the POs for all the courses are given below.

## 2.2 Mapping of CO Vs POs and PSOs

### 2.2.1 B.Tech in Computer Science & Engineering

The following PSOs are specified by the departmental board of studies.

- PSO1. The ability to understand, analyze and develop computer programs in the area related to business intelligence, web design and networking for efficient design of computer-based systems of varying complexities.
- PSO2. The ability to apply standard practices and strategies in software development using open-ended programming environments to deliver quality product for business success.

Table 1: Course Outcome of CSE1001

CSE1001:INTRODUCTION TO COMPUTER PROGRAMMING	
Course Outcome	Students will be able to
CO1	State and explain the basic Java programming syntax, semantics, and building blocks.
CO2	Design, write, debug, and test the correctness of programs.
CO3	Develop Java programs using programming constructs like conditional statements, looping, arrays, methods, and class.
CO4	Solve computational problem(s) using programming constructs.
CO5	Identify the problem, and identify a solution plan for the problem.
CO6	Analyze the problem, and improve the efficiency of the solution.



Table 2: Mapping between COs of CSE1001 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓													
CO2		✓	✓		✓								✓	
CO3			✓		✓								✓	
CO4		✓	✓		✓									
CO5		✓	✓										✓	
CO6		✓	✓										✓	

Table 3: Course Outcome of CSE1004

CSE1004:INTRODUCTORY GRAPH THEORY	
Course Outcome	Students will be able to
CO1	Define the fundamental concepts of graphs and apply them to study graph isomorphisms, Eulerian graphs, graphic sequences and digraphs.
CO2	Define trees, spanning trees and study its various concepts and apply the Kruskal's algorithm to find the minimum spanning tree and Dijkstra's algorithm to find the shortest path of connected weighted graphs.
CO3	Define and discuss matchings and factorization of graphs and study its various applications.
CO4	Discuss coloring of graphs, it's enumeration aspects and its applications.
CO5	Discuss and analyze planar graphs and study its various applications.
CO6	Define and discuss line graphs, edge-coloring and study the various aspects Hamiltonian cycles.

Table 4: Mapping between COs of CSE1004 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓												✓	
CO2	✓												✓	
CO3	✓	✓											✓	
CO4	✓	✓											✓	
CO5	✓	✓											✓	
CO6	✓	✓											✓	

Table 5: Course Outcome of CSE1002

CSE1002:DISCRETE MATHEMATICS	
Course Outcome	Students will be able to
CO1	Analyze and apply rules of logic to distinguish between valid and invalid arguments and use them to prove mathematical statements.
CO2	Discuss sets, their various operations and use them to analyze functions and its various concepts as well as study sequences and summations.
CO3	Analyze the searching and sorting algorithms and use the growth of functions to study the time complexity of algorithms as well as apply some of the important concepts of number theory to divisibility and modular arithmetic, integer representation of algorithms, congruences and cryptography.
CO4	Construct proofs by mathematical induction and analyze and formulate recursive definitions and develop structural induction.
CO5	Apply different counting techniques to solve various problems.
CO6	Apply relations and their properties to analyze equivalence relations and partial orderings.

Table 6: Mapping between COs of CSE1002 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓	✓											✓	
CO2	✓	✓											✓	
CO3	✓	✓											✓	
CO4	✓	✓											✓	
CO5	✓												✓	
CO6	✓	✓											✓	

Table 7: Course Outcome of CSE3141

CSE3141:COMPUTER SCIENCE WORKSHOP 2	
Course Outcome	Students will be able to
CO1	Become accentuated with system, regular expression, string operations using java API.
CO2	Structuring Data with Java, Object-Oriented Techniques, Functional Programming Techniques
CO3	Understanding Streams, Parallel Collections, Input and Output, Directory and File system Operations, Mail.
CO4	Learn about Graphics, Audio, Video, Network Clients, Graphical User Interfaces, Internationalization and Localization, Server-Side Java, Java and Electronic Mail.
CO5	Becomes familiar with Database Access, Processing JSON Data, Processing XML, Packages and Packaging, Threaded Java.

Table 8: Mapping between COs of CSE3141 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓		✓		✓								✓	✓
CO2	✓													
CO3	✓													
CO4			✓		✓								✓	✓
CO5			✓		✓								✓	✓

Table 9: Course Outcome of CSE2033

CSE2033:ADVANCED DISCRETE MATHEMATICS	
Course Outcome	Students will be able to
CO1	Explain the concepts of Discrete Mathematics and to develop logical thinking and its application to computer science.
CO2	Solving real-life problems related to counting, discrete probability by applying various counting techniques.
CO3	Apply the concepts of Partially Ordered Sets, Lattices in General, Complete Lattices, Distributive and Modular Lattices, and Complemented Modular Lattices and Boolean Algebras.
CO4	The concepts of lattice theory are applied in various field within mathematics and allied subjects like Quantum mechanics in Physics and concept lattices in computer science.
CO5	Comprehensive introduction to commutative rings and modules.
CO6	Construction of a foundation for further studies in algebra and algebraic geometry.

Table 10: Mapping between COs of CSE2033 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓												✓	
CO2	✓				✓								✓	
CO3	✓				✓								✓	
CO4		✓			✓								✓	✓
CO5		✓			✓								✓	
CO6		✓			✓									✓

Table 11: Course Outcome of CSE3131

CSE3131:ALGORITHMS DESIGN I	
Course Outcome	Students will be able to
CO1	Apply knowledge of computing and mathematics to algorithm design,
CO2	Argue/prove correctness of algorithms using inductive proofs and invariant.
CO3	Analyze worst case running times of algorithms using asymptotic analysis.
CO4	Describe the divide and conquer paradigm and explain when an algorithmic design situation calls for it; recite algorithms that employ this paradigm; synthesize divide and conquer algorithms.
CO5	Design and analyze common algorithms for searching and sorting.
CO6	Explain the major graph algorithms and their analyses. Employ graphs to model engineering problems, when appropriate.

Table 12: Mapping between COs of CSE3131 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓	✓											✓	
CO2	✓													
CO3	✓													
CO4		✓	✓										✓	✓
CO5		✓	✓	✓										✓
CO6					✓									✓

Table 13: Course Outcome of CSE2141

CSE2141:COMPUTER SCIENCE WORKSHOP 1	
Course Outcome	Students will be able to
CO1	To Understand the basic terminology used in c programming
CO2	To write, compile and debug programs in C language
CO3	To formulate problems and implement algorithms in C
CO4	To effectively choose programming components that efficiently solve computing problems in real-world
CO5	To learn about functions and how to use them to write programs with separate modules
CO6	To learn how to modularize a program system and pass information between system

Table 14: Mapping between COs of CSE2141 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓													
CO2	✓		✓										✓	✓
CO3	✓				✓									
CO4		✓	✓		✓									
CO5	✓		✓										✓	✓
CO6			✓		✓								✓	✓

Table 15: Course Outcome of CSE1011

CSE1011: DIGITAL LOGIC	
Course Outcome	Students will be able to
CO1	Apply concepts of number systems, binary codes to design digital logic circuits
CO2	Apply concepts of Boolean Algebra Theorems and functions along with logic gates to solve logic operations
CO3	Apply concepts of K-map for simplification/minimization of digital circuits with various logic gates
CO4	Analyze and Design combinational circuits using HDL by applying the concepts of logic gates and K-map
CO5	Apply the concepts of latches and Flip Flops to Design and analyze clocked sequential circuits using HDL
CO6	Apply the concepts of combinational logic, shift-registers, Memory and Programmable Logic to build various digital circuits using HDL

Table 16: Mapping between COs of CSE1011 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓													
CO2	✓													
CO3	✓													
CO4	✓	✓			✓									
CO5	✓	✓			✓									
CO6	✓				✓									

Table 17: Course Outcome of CSE4131

CSE4131:ALGORITHM DESIGN 2	
Course Outcome	Students will be able to
CO1	Understand the network flow problem and apply it to real-world problems,
CO2	Use a greedy approach to solve an appropriate problem and prove if the greedy rule chosen leads to an optimal solution
CO3	Use recursive backtracking to solve an appropriate problem and identify errors in incorrect implementations; describe various heuristic problem solving methods
CO4	Use dynamic programming to solve an appropriate problem or provide a recursive solution using memorization
CO5	Distinguish between computationally tractable and intractable problems; define and relate class-P, class-NP and class NP-complete; given a problem in NP, define an appropriate certificate and the verification algorithm
CO6	Identify and apply an appropriate algorithmic approach to solve a problem and explain the challenges to solve it

Table 18: Mapping between COs of CSE4131 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓	✓											✓	✓
CO2	✓	✓												✓
CO3	✓	✓												
CO4	✓	✓	✓										✓	✓
CO5		✓	✓	✓										
CO6					✓									



Table 19: Course Outcome of CSE4049

CSE4049:DESIGN OF OPERATING SYSTEM	
Course Outcome	Students will be able to
CO1	To understand the different components of Operating System and various ways of structuring an operating system
CO2	To analyze the mechanisms involved in handling, scheduling, synchronizing processes and threads
CO3	To learn the different methods used to prevent and deal with deadlock
CO4	To explore various memory management, file handling and input output schemes, analyzing their effectiveness in different scenario
CO5	To gain knowledge about various data structures and functions used for process management, scheduling, synchronization
CO6	To explore various memory and file management in Linux operating system

Table 20: Mapping between COs of CSE4049 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓													
CO2		✓	✓	✓										
CO3	✓	✓												
CO4		✓												
CO5	✓			✓										
CO6	✓			✓										

Table 21: Course Outcome of CSE4032

CSE4032:FOUNDATIONS OF MACHINE LEARNING	
Course Outcome	Students will be able to
CO1	Ability to understand the concept of Machine Learning Techniques and understand the nature of Datasets
CO2	Analyze the dataset using various machine learning techniques and learn the pattern in the dataset.
CO3	Understand the computing environment (R) that are suitable for the applications under consideration
CO4	Apply various ways of selecting suitable model parameters for different Machine Learning Techniques
CO5	Integrate machine learning libraries, mathematical and statistical tools
CO6	Implement solutions using the machine learning techniques and the programming framework (R) to obtain acceptable decisions for the real world problems

Table 22: Mapping between COs of CSE4032 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓			✓									✓	
CO2					✓									
CO3				✓	✓									
CO4				✓	✓									
CO5					✓									
CO6					✓									✓

Table 23: Course Outcome of CSE4021

CSE4021:PROGRAMMING LANGUAGES AND COMPILERS	
Course Outcome	Students will be able to
CO1	Apply the principles in the theory of computation to the various stages in the design of compilers.
CO2	Explain the stages involved in the translation process.
CO3	Acquire knowledge in different phases and passes of Compiler, and specifying different types of tokens by lexical analyzer, and also able to use the compiler tools like LEX, YACC, etc.
CO4	Understand and design Parser(s) (LL, SLR, CLR and LALR) and its type's i.e. Top-down and Bottom-up parsers.
CO5	Apply and evaluate syntax directed translation schemes, synthesized attributes, inherited attributes, different techniques for code optimization, symbol table organization, code generation and the fundamentals of runtime environment.
CO6	Design different types of compiler tools to meet the requirements of the realistic constraints of compilers.

Table 24: Mapping between COs of CSE4021 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓												✓	
CO2		✓												
CO3			✓		✓								✓	
CO4			✓											✓
CO5				✓									✓	
CO6			✓		✓									✓

Table 25: Course Outcome of CSE3151

CSE3151:INTRODUCTION TO DATABASES	
Course Outcome	Students will be able to
CO1	To identify and explain the different components and functionalities of DBMS and their interdependence through the database architecture
CO2	To apply relational algebra and relational calculus to express queries on relational schemes
CO3	To analyze an enterprise schema for given user requirements and apply the conceptual database design principles through ER modeling to construct the ER diagram
CO4	To analyze and design relational database schema using decomposition and normalization techniques
CO5	To develop a database application as per user requirements using SQL and JDBC connectivity.
CO6	To understand and interpret the functional issues related to transaction and database recovery along with the concept of storage and database system architecture.

Table 26: Mapping between COs of CSE3151 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓													
CO2	✓	✓												
CO3		✓	✓	✓										
CO4				✓										
CO5	✓	✓	✓		✓									
CO6	✓	✓												

Table 27: Course Outcome of CSE3042

CSE3042:PROGRAMMING PRACTICE 2	
Course Outcome	Students will be able to
CO1	Demonstrate the effective use of classes to encapsulate data storage structures and the class interface. Illustrate searching, insertion, and deletion in arrays and ordered arrays by suitable examples.
CO2	Make use of different sorting techniques to solve problems and analyze the time complexity.
CO3	Solve problems by using Abstract Data Types (ADTs); stack, queue and priority queue.
CO4	Apply linked list for formulating solutions to different problems.
CO5	Understand the problem solving tool, recursion to implement merge sort and quick sort.
CO6	Experiment with binary search tree and its operations & Learn the use of weighted graphs to find the shortest path.

Table 28: Mapping between COs of CSE3042 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓	✓	✓											
CO2	✓	✓	✓										✓	✓
CO3	✓		✓											
CO4	✓		✓		✓									
CO5	✓		✓										✓	✓
CO6	✓	✓											✓	✓

Table 29: Course Outcome of CSE3041

CSE3041:UNIX SYSTEMS PROGRAMMING	
Course Outcome	Students will be able to
CO1	Understand Unix operating system concepts, terminologies, and basic commands.
CO2	Become familiar with Unix file system, programs, processes, and threads.
CO3	Develop a command of the Unix shell environment, including Unix commands and utilities.
CO4	Learn the fundamentals of signal handling and timers used in Unix operating system.
CO5	Understand thread creation, management, synchronization and apply it in realistic applications.
CO6	Become familiar with basic IPC issues and communication techniques in Unix systems programming.

Table 30: Mapping between COs of CSE3041 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓													
CO2	✓	✓	✓											
CO3	✓	✓												
CO4	✓	✓	✓											✓
CO5	✓	✓	✓		✓									✓
CO6	✓	✓	✓		✓								✓	✓

Table 31: Course Outcome of CSE3031

CSE3031:THEORY OF COMPUTATION	
Course Outcome	Students will be able to
CO1	Enhance / develop ability to understand and conduct mathematical proofs for computation and algorithms.
CO2	Design and analyze finite automata, and regular expression for describing regular languages.
CO3	Design and analyze pushdown automata, and context-free grammars.
CO4	Design and analyze Turing machine.
CO5	Design, implement, and evaluate computational models to meet desired needs of the languages, and formulate computational models for real-life problems.
CO6	Demonstrate the understanding of key notions, such as algorithm, computability, decidability, and complexity through problem solving.

Table 32: Mapping between COs of CSE3031 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓													
CO2			✓											✓
CO3			✓											
CO4			✓										✓	
CO5				✓									✓	
CO6		✓												✓

Table 33: Course Outcome of CSE4043

CSE4043:LINUX SYSTEM ADMINISTRATION 1	
Course Outcome	Students will be able to
CO1	Ability to understand the Linux Operating System and working principle of the built-in commands available in Linux. Understand the concept of Shell and the different usage of the commands in shell.
CO2	Analyze and usage of scripting for Bash Shell along with regular expressions.
CO3	Understand the principle of bootstrapping through kernel initialization and hardware configuration. Learn the use of traditional and modern access control for Linux.
CO4	Understand the principle of a process along with various stages of the life cycle.
CO5	Learn and usage of file system mounting and un-mounting with different file attributes.
CO6	Learn the technique of file system restoration, using various backup devices and media & Learn the techniques of naming convention and usage for various device files.

Table 34: Mapping between COs of CSE4043 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓		✓										✓	
CO2	✓				✓								✓	✓
CO3	✓				✓				✓				✓	
CO4	✓		✓										✓	
CO5	✓				✓								✓	✓
CO6	✓				✓								✓	



Table 35: Course Outcome of CSE3161

CSE3161:HUMAN COMPUTER INTERACTION	
Course Outcome	Students will be able to
CO1	To understand and analyze different computer based interactive systems.
CO2	To identify the user needs and establish the requirements by understanding the professional and ethical responsibilities.
CO3	Interpret the real world problems and map them to digital world solutions by the application of current techniques, skills and tools.
CO4	Design simple lifecycle models for alternative solutions to built perfect user interfaces.
CO5	Compose a common goal in order to communicate.
CO6	Interact effectively with large number of audiences.

Table 36: Mapping between COs of CSE3161 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓	✓												✓
CO2		✓	✓					✓					✓	✓
CO3					✓								✓	✓
CO4			✓		✓								✓	✓
CO5									✓	✓				
CO6									✓	✓				

## 2.2.2 B.Tech in Electronics and Communication Engineering

The following PSOs are specified by the departmental board of studies.

- PSO1. The student will be able to Apply the fundamentals of mathematics, science and engineering knowledge to analyze, identify and solve electronics and communication engineering problems.
- PSO2. The student will be able to design and conduct experiments, analyse and interpret the data using modern software tools with proper understanding of basic concepts of Electronics and Communication systems.
- PSO3. The student will be able to Apply the contextual knowledge of Electronics to assess societal, environmental, health issues, communicate accurately to work as

individuals or in groups with professional ethics, and to address and solve technological real-world issues.

Table 37: Course Outcome of EET1102

EET1102:INTRODUCTION TO ELECTRICAL & ELECTRONIC CIRCUITS	
Course Outcome	Students will be able to
CO1	Apply basic laws such as Ohms law, KVL, KCL to calculate power in different circuits. Recognize series, and parallel connection. Realize concept of KCL, KVL, series-parallel circuits using Bread Board in the Lab. Apply the voltage division and current division principles. Identify the V-I characteristics of two terminal elements.
CO2	Solve circuit by Node and Loop method. Apply the superposition principle. Find Thevenin and Norton equivalent circuit in different dc resistive circuits. Realize Superposition principle, Thevenin's and Norton's theorem using Bread Board in the Lab. Find the current (voltage) for a capacitance or inductance given the voltage (current) as a function of time.
CO3	Find the current (voltage) for a capacitance or inductance given the voltage (current) as a function of time. Compute the equivalent capacitance, equivalent inductance, and energy stored in capacitors or inductors. Understand the concepts of transient response and steady-state response for first order RC and RL circuits. Realize First Order DC Transient and calculation of time constant using Bread Board in the Lab. Use various amplifier models to calculate amplifier performance for given sources and loads.
CO4	Use various amplifier models to calculate amplifier performance for given sources and loads. Understand the importance of input and output impedance of amplifiers. Understand the characteristics of ideal op amps. Realize and design different amplifiers using OP-AMP using Bread Board in the Lab. Apply Ohms Law and Kirchhoff's Laws for Solve different OP-AMP circuits.
CO5	Understand diode operation and load-line technique to analyze nonlinear circuits. Use the ideal-diode model and piecewise-linear models to solve circuits. Understand various rectifier, wave-shaping circuits and realize the same in lab using Bread Board. Analyse simple voltage-regulator circuits. Understand the concept of switch element, MOSFET operation and its physical structure.
CO6	Understand the concept of switch element, MOSFET operation and its physical structure. Use MOSFET as a switch element for implementation of digital logic circuits. Analyze the S (switch), the SR (switch - resistor) models and the SCS (switch-current-source) model of the MOSFET. Realize the MOSFET as a switch in the lab using Bread Board.

Table 38: Mapping between COs of EET1102 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓	✓	✓	✓					✓	✓					
CO2	✓	✓		✓					✓						
CO3	✓	✓	✓	✓					✓	✓					
CO4		✓		✓					✓				✓		✓
CO5	✓	✓	✓	✓					✓	✓			✓	✓	✓
CO6		✓	✓	✓					✓	✓					

Table 39: Course Outcome of EET1100

EET1100:ELECTRICAL AND ELECTRONICS WORKSHOP	
Course Outcome	Students will be able to
CO1	Familiarization of Electronic components and Equipment. Utilization of battery power to glow an LED through fixed and variable resistor.
CO2	Apply the concept of renewable energy source with electro-chemistry to implement a lemon battery. Adaptation with different types of switches (Mechanical, Electrical and Electronic switches). Measurement of time constant for an RC Circuit
CO3	Apply the electronic hardware tools to implement electronic component on vero-board.
CO4	Investigation of 555 timer Integrated Circuit and its operation. Implementation of Intrusion alarm system using 555 timer IC.
CO5	Familiarization of ARDUINO Integrated Development Environment (IDE).
CO6	Interfacing different sensors with ARDUINO to solve real life problems.

Table 40: Mapping between COs of EET1100 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓												✓		
CO2		✓											✓		
CO3					✓				✓			✓		✓	✓
CO4		✓											✓		
CO5					✓				✓			✓		✓	✓
CO6					✓				✓			✓		✓	✓

Table 41: Mapping between COs of EET1021 and (POs & PSOs)

EET1021:LOGIC DESIGN															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Apply concepts of number systems, binary codes to design digital logic circuits	✓														
CO2:Apply concepts of Boolean Algebra Theorems and functions along with logic gates to solve logic operations	✓														
CO3:Apply concepts of K-map for simplification/minimization of digital circuits with logic gates	✓														
CO4:Analyze and Design combinational circuits using HDL by applying the concepts of logic gates and K-map	✓	✓				✓							✓	✓	
CO5:Apply the concepts of latches and Flip Flops to Design and analyze clocked sequential circuits using HDL	✓	✓				✓							✓	✓	
CO6:Apply the concepts of combinational logic, shift-registers, Memory and Programmable Logic to build various digital circuits using HDL	✓					✓							✓	✓	

Table 42: Mapping between COs of EET2131 and (POs & PSOs)

EET2131: MICROELECTRONIC DEVICES & CIRCUITS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1: Identify the charge carriers and analyse their transport phenomena in semiconductors	✓			✓									✓		
CO2: Analyse the mechanism of PN junctions and build the corresponding current expressions	✓			✓									✓	✓	
CO3: Inspect, Design and build different biasing circuits for BJT and MOSFET operation	✓		✓	✓										✓	
CO4: Apply the mechanism of operations to model the small signal operation of BJT and MOSFET	✓	✓		✓									✓		
CO5: Design and develop different BJT and MOSFET amplifier circuits and study the frequency response of BJT amplifiers			✓	✓										✓	
CO6: Analyze the Operational Amplifiers, mechanism of feedback in amplifier design and study output stages and efficiency estimation	✓	✓		✓									✓	✓	

Table 43: Course Outcome of EET2111

EET2111:CIRCUIT THEORY	
Course Outcome	Students will be able to
CO1	<ul style="list-style-type: none"> <li>i. Apply Ohm's Law &amp; Kirchhoff's Laws to node-voltage analysis technique &amp; mesh current analysis technique to find branch current and voltage in different types of electric circuits.</li> <li>ii. Apply Thevenin's, Norton's, superposition and Maximum power transform theorem in different electrical circuits.</li> </ul>
CO2	<ul style="list-style-type: none"> <li>i. Understand the fundamentals of sinusoidal steady state for both 1-phase and 3-phase circuits.</li> <li>ii. Evaluate the rms and average value of different types of periodic signals.</li> <li>iii. Apply the concept of phasor and complex algebra to solve different electric circuits.</li> <li>iv. Design phase shifter circuits, oscillators and capacitance multipliers. Determine the Complex power and its relationship to real and reactive power.</li> </ul>
CO3	Evaluate the Laplace and inverse Laplace transforms. Apply the Laplace Transform for solving integro-differential equations. Apply the Laplace Transform in circuit analysis in time domain for 1st and 2nd order system. Apply Ohm's Law & Kirchhoff's Laws for Solve different OP-AMP circuits. Design different amplifier, Digital to Analog Converter, Instrumentation amplifiers using OP-AMP.
CO4	Apply Ohm's Law & Kirchhoff's Laws for Solve different OP-AMP circuits. Design different amplifier, Digital to Analog Converter, instrumentation amplifiers using OP-AMP. Design Integrator, differentiator and analog computer using inductor, capacitor and OP-AMP. Design of analog computer to solve a 1st order differential equation in Lab using Bread Board.
CO5	<ul style="list-style-type: none"> <li>i. Apply the concept of mutual inductance to solve different electrical circuits. Model equivalent circuits of electrical networks, transistors, Transmission lines using two port parameters.</li> <li>ii. Evaluate the input impedance, output admittance, voltage and current gain of the two port network. Realize the two port network parameters in lab.</li> </ul>
CO6	Design the resonance circuits. Realize the quality factor and Bandwidth of R-L-C circuits in Lab. Determine the transfer function and Frequency response using Bode plots. Design active and passive filters.

Table 44: Mapping between COs of EET2111 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓	✓	✓						✓	✓			✓	✓	✓
CO2	✓	✓	✓						✓	✓			✓	✓	✓
CO3	✓	✓	✓						✓				✓	✓	✓
CO4	✓	✓	✓						✓	✓			✓	✓	✓
CO5	✓	✓		✓					✓	✓			✓	✓	✓
CO6	✓	✓	✓	✓					✓	✓			✓		✓

Table 45: Course Outcome of EET2211

EET2211:COMPUTER ORGANISATION AND ARCHITECTURE	
Course Outcome	Students will be able to
CO1	Explain the concepts that underline the modern computers evolution, function and organization.
CO2	Identify the best organization of a computer for achieving the best performance when asked to make a selection from the current market.
CO3	Differentiate type of memory components in terms of its technology and usage.
CO4	Convert integer and floating point numbers to its internal data representation.
CO5	Construct a series computer instructions to perform low level processor operations.
CO6	Understand the concept of superscalar organization, which exploits instruction level parallelism and the performance issues which had driven the move to multicore computers.

Table 46: Mapping between COs of EET2211 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓												✓		
CO2		✓											✓		
CO3	✓												✓		
CO4	✓									✓			✓		
CO5		✓			✓								✓	✓	
CO6	✓												✓		

Table 47: Mapping between COs of EET4041 and (POs & PSOs)

EET4041:ELECTROMAGNETIC WAVES II															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Understand the radiation mechanism of different antennas types	✓												✓		
CO2:Apply knowledge of fundamental antenna parameters to develop the basic skills necessary for designing antenna arrays	✓	✓	✓										✓	✓	
CO3:Explain the wave propagation mechanism	✓	✓											✓		
CO4:Understand the wave dispersion phenomena to explore the tunneling phenomena associated with evanescent waves & use of Doppler effects in RADAR to measure the speed of a target	✓	✓											✓		
CO5:Design suitable wave-guide & resonators to support dominant mode	✓	✓	✓										✓	✓	
CO6:Estimate Microwave Link budget and Design Microwave Link considering different atmospheric effects	✓	✓	✓										✓		



Table 48: Mapping between COs of EET3132 and (POs & PSOs)

EET3132:ANALOG FILTER DESIGN															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Understand the operation of electronic filters and describe them in the frequency domain from their magnitude characteristics	✓												✓	✓	
CO2:Design lowpass, highpass, bandpass and band reject passive and active RC filters with all-pole and rational approximations using the appropriate mathematics or filter tables.	✓				✓								✓	✓	
CO3:Use software system simulation tools to verify filter specifications in the frequency domain	✓				✓								✓	✓	
CO4:Use software tools to design frequency selective electronic circuits		✓			✓								✓	✓	
CO5:Design filters to meet given design specifications.		✓			✓								✓	✓	
CO6:Collaborate with fellow students in a team, in order to solve complex filter design and implementation problems		✓			✓								✓	✓	

Table 49: Mapping between COs of EET3131 and (POs & PSOs)

EET3131:DESIGN WITH ANALOG INTEGRATED CIRCUITS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Inspect the fundamentals of OPAMP to design and construct the basic OPAMP circuits.	✓	✓		✓	✓								✓	✓	
CO2:Relate theoretical concepts of OPAMP to design different linear and non-linear circuits for different mathematical operations and source conversion	✓	✓		✓	✓								✓	✓	
CO3:Explicate and design the active filters using OPAMP.	✓	✓		✓	✓								✓	✓	
CO4:Analyze the static and dynamic limitations of Operational amplifier.	✓	✓											✓		
CO5:Evaluate the performance of OPAMP under the presence of different noise sources to stabilize the circuit operation.	✓	✓											✓		
CO6:Comprehend & differentiate the working principle of various signal generators using OPAMP.	✓	✓		✓	✓								✓	✓	

Table 50: Mapping between COs of EET3061 and (POs & PSOs)

EET3061:COMMUNICATION SYSTEMS I															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Analyse the Spectrum of periodic and a-periodic signal using the concept of Fourier Series and Fourier transform.	✓	✓											✓		
CO2:Understand the importance of modulation and differentiate between different amplitude modulation and demodulation techniques	✓	✓											✓		
CO3:Explain the difference between AM and FM, study the process of modulation and demodulation of FM signal	✓	✓	✓										✓	✓	
CO4:Illustrate the importance of sampling and apply the knowledge of sampling theorem, quantization to convert analogue signal to digital signal.	✓	✓		✓									✓		
CO5:Understand the advantages of PCM over analog communication technique and explain different PCM signalling schemes.	✓														
CO6:Analyse the mathematical model of noise and its effect on SNR for various modulation schemes.		✓			✓										✓

Table 51: Mapping between COs of EET3041 and (POs & PSOs)

EET3041:ELECTROMAGNETIC WAVES I															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Apply the mathematical principles of vector algebra to different coordinate system and vector calculus to interpret gradient, divergence and curl.	✓												✓		
CO2:Apply Gauss's law, Coulombs law and Poisson's equation to find fields and potential for variety of situations including charge distributions and capacitors. Apply the boundary conditions to calculate field in different mediums.	✓	✓											✓		
CO3:Identify the basic laws (Biot-Savart's law, Ampere's Law) to solve magneto static problems for different current distributions.	✓	✓											✓		
CO4:Analyses Maxwell's equations in differential and integral forms, both in time and frequency domain for time varying fields.		✓		✓									✓		
CO5:Apply Maxwell's equation to formulate wave equations for different medium. Apply Poynting's theorem to calculate average power of Electromagnetic Waves.		✓		✓									✓		
CO6:Generalize the concepts of transmission line, means of transporting energy or information, commonly used in power distribution and communication. Use Smith chart to solve transmission line problems and design different impedance matching network.		✓		✓											✓

Table 52: Mapping between COs of EET3003 and (POs & PSOs)

EET3003:MICROPROCESSORS AND MICROCONTROLLERS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Describe the basics of Microprocessors & Microcontroller and peripheral ICs.	✓											✓	✓		
CO2:Classify machine instructions and analyze the execution of assembly coded programs	✓		✓		✓								✓	✓	
CO3:Develop algorithms and programming of Microprocessors & Microcontroller for various engineering applications.	✓		✓		✓							✓	✓	✓	
CO4:Define the unique design problems and challenges of real-time systems	✓	✓	✓		✓								✓		
CO5:Analyze & Test and debug different programs relating to real life applications	✓	✓											✓	✓	
CO6:Use software tools to simulate various interfacing circuits.		✓			✓								✓	✓	

Table 53: Mapping between COs of EET3001 and (POs & PSOs)

EET3001:ELECTRICAL AND ELECTRONIC MEASUREMENTS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Understand the fundamentals of measurement systems, and measure of various electrical parameters with accuracy, precision and resolution.	✓												✓		
CO2:Analyze the working of Cathode Ray Oscilloscope for appropriate measurement of voltage, current, frequency and phase.	✓			✓									✓	✓	
CO3:Analyze different electro mechanical instruments, analog electronic instruments and digital instruments.	✓												✓		
CO4:Design and analysis of signal processing elements such as Analog to digital converts and digital to analog converters.		✓		✓									✓	✓	
CO5:Design and characteristics study of voltage comparators, voltage limiters and zero crossing detector.		✓		✓									✓	✓	
CO6:Study of different dc and ac bridges and measurement of resistance, inductance and capacitance.	✓			✓									✓	✓	

Table 54: Mapping between COs of EET2051 and (POs & PSOs)

EET2051: SIGNALS AND SYSTEMS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1: Apply knowledge of mathematics, science and Engineering to understand the concept behind signals, systems and perform operations on signals and systems.	✓	✓			✓								✓	✓	
CO2: Define and (i) represent systems using differential equations and (ii) classify the systems (iii) Obtain response of the system to different inputs.	✓	✓			✓								✓	✓	
CO3: Apply Laplace Transform to analyze the continuous time signals and systems in frequency domain.	✓	✓			✓								✓	✓	
CO4: Understand the significance of Fourier series in representation of a signal (periodic). Learn trigonometric and complex exponential FS, convergence of FS, Properties of FS.	✓	✓	✓		✓								✓	✓	
CO5: Understand the significance of Fourier Transform in analysis of signals and systems. Learn about the conditions for existence of FT, Line spectra, relation between LT and FT, properties of FT, significance of Parseval's theorem.	✓	✓			✓								✓	✓	
CO6: Analyze LTI systems with FS: Obtain transient and steady state response to a sinusoidal input, analyze the response of LTI systems to periodic / aperiodic signals, and understand the mechanism behind different filters, Visualize the spectrum of a signal, Gibbs phenomena on MATLAB platform. Design low pass (butterworth and Chebyshev) analog Filters from the given specifications and simulation on MATLAB platform for developing applications.	✓	✓	✓	✓	✓				✓	✓				✓	

Table 55: Mapping between COs of EET2021 and (POs & PSOs)

EET2021:COMPUTER ORGANISATION AND ARCHITECTURE															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Recognize the different blocks of computer architecture	✓												✓		
CO2:(i) Recognize the address modes for a specific MIPS instruction. (ii) Develop the algorithm and translate it to corresponding assembly language programming. (iii) Analyze the result using MIPS instruction.		✓			✓								✓		
CO3:Correlate the different hardware blocks with the help of MIPS instructions.	✓				✓								✓		
CO4:Extend the concept of mathematics to evaluate the performance of the computer system.		✓											✓		✓
CO5:Apply the concept of the data path, control and pipelining of a processor to enhance the performance of the computing system.		✓											✓	✓	
CO6:Outlines the basic concept of memory hierarchy in computer system.		✓											✓		



Table 56: Mapping between COs of EET3051 and (POs & PSOs)

EET3051: DIGITAL SIGNAL PROCESSING															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1: Understanding of band limitedness, Fourier transform and its properties, sampling theorem to analyze the signal for various applications.	✓	✓		✓	✓								✓	✓	
CO2: Apply knowledge of parameters of a signal, to analyze discrete time signals.	✓	✓		✓	✓								✓	✓	
CO3: Apply knowledge characteristics of a system, operations involved with a system to analyze discrete time systems.	✓	✓		✓	✓								✓	✓	
CO4: Apply knowledge of Z-transform, ROC and its properties to analyze discrete time signals and systems.	✓	✓		✓	✓								✓	✓	
CO5: Apply knowledge of DTFT, DFT, IDFT, up sampling, down sampling, circular convolution, aliasing phenomena to analyze signals and systems.	✓	✓		✓	✓								✓	✓	
CO6: Design of IIR filter and FIR filter, realization of IIR and FIR filters using different structures.	✓	✓	✓	✓	✓								✓	✓	

### 2.2.3 B.Tech in Electrical Engineering

The following PSOs are specified by the departmental board of studies.

- PSO1. The student will be able to develop mathematical model, Simulink models and analyze the performance of electrical machines, control system, power system, and renewable energy system and power electronic converters.
- PSO2. The student will be able to design the products like transformers, inductors, rotating machines and power electronic converters and also able to interface with the PC through different boards like DSP, ARDUINO, Micro-controller and FPGA etc.
- PSO3. The student will be able to solve complex and contemporary issues involved in Power System and Renewable Energy System using the knowledge of Probability and Statistics and different software tools like MATLAB, Power world Simulator etc.

Table 57: Course Outcome of EET3186

EET3186:DESIGN OF ROTATING ELECTRICAL MACHINES	
Course Outcome	Students will be able to
CO1	Understand the principal laws and methods in electrical machine design.
CO2	Understand various factors associated with DC and AC machine winding and select the gauge (size) of the conductor for a particular application
CO3	<ul style="list-style-type: none"> <li>i. Understand the concept of leakage flux and leakage reactance.</li> <li>ii. Know the concept of skin effect to calculate the resistance of an AC winding.</li> </ul>
CO4	<ul style="list-style-type: none"> <li>i. Understand various terms like efficiency, losses, voltage equation and temperature rise in rotating electrical machines.</li> <li>ii. Understand the various terms associated with design of rotating electrical machines.</li> <li>iii. Realize the importance of various factors involved in designing rotating electrical machines and judiciously trade off the effecting factors to achieve the optimal design.</li> </ul>
CO5	Design a DC Motor
CO6	Design a single-phase induction motor

Table 58: Mapping between COs of EET3186 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓	✓								✓				✓	
CO2	✓	✓								✓			✓	✓	✓
CO3	✓	✓	✓							✓			✓	✓	
CO4	✓	✓	✓	✓					✓	✓				✓	
CO5	✓	✓		✓					✓	✓			✓	✓	✓
CO6	✓	✓	✓	✓					✓	✓			✓	✓	✓

Table 59: Course Outcome of EET3185

EET3185:INDUCTOR AND TRANSFORMER DESIGN	
Course Outcome	Students will be able to
CO1	<ul style="list-style-type: none"> <li>i. Analyze and solve magnetic circuit problems for various electrical elements/-components.</li> <li>ii. Understand the properties of various magnetic materials used for high and low frequency applications.</li> </ul>
CO2	<ul style="list-style-type: none"> <li>i. Analyze and select a suitable core for a particular application.</li> <li>ii. Understand various factors associated with inductor and transformer winding and select the gauge (size) of the conductor for a particular application.</li> </ul>
CO3	Realize the importance of various factors involved in designing inductors & transformers and judiciously trade off the effecting factors to achieve the most desirable design.
CO4	Understand various terms like efficiency, losses, voltage regulation and temperature rise in transformer and inductor.
CO5	Design a single-phase power transformer.
CO6	Design a single-phase constant voltage transformer (CVT).

Table 60: Mapping between COs of EET3185 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓	✓												✓	
CO2	✓	✓											✓	✓	
CO3	✓	✓											✓	✓	✓
CO4	✓	✓	✓	✓						✓				✓	
CO5	✓	✓	✓	✓						✓				✓	
CO6	✓	✓	✓	✓						✓				✓	

Table 61: Course Outcome of EET3083

EET3083:POWER SYSTEM ANALYSIS AND DESIGN 1	
Course Outcome	Students will be able to
CO1	Understand the concept of active power, reactive power and complex Power
CO2	Solve interconnected power system problems using per unit system.
CO3	Formulate the bus admittance matrix from one-line diagram of the power system.
CO4	Compute the line inductance and capacitance of single phase and three phase transmission line.
CO5	Modelling of transmission lines and its performance analysis.
CO6	Identify the need for line compensation and compensating equipment.

Table 62: Mapping between COs of EET3083 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓	✓			✓					✓			✓		
CO2	✓	✓											✓		
CO3	✓	✓											✓		
CO4	✓	✓		✓	✓					✓			✓		✓
CO5		✓		✓	✓					✓			✓		
CO6	✓	✓													✓

Table 63: Course Outcome of EET3082

EET3082:ELECTRICAL MACHINES 2	
Course Outcome	Students will be able to
CO1	Know the construction and types of synchronous machines, analyse the cause of harmonics in induced emf and their reduction, analyse the armature reaction in synchronous machines, determination of voltage regulation of an alternator, write a MATLAB program to determine the voltage regulation using various methods.
CO2	Synchronize an alternator with another alternator and with infinite bus, analyse the effect of variation in field excitation and prime-mover input on the performance of alternator, understand the concept of synchronising power and synchronising torque, know various losses in an alternator and determine its efficiency, write a MATLAB to plot V- and inverted V-curves of an alternator.
CO3	Understand the working principle of synchronous motors and various methods of starting, analyse the V and inverted V-curves of a synchronous motor.
CO4	Analyse the concept and need of power factor improvement, understand the concept of synchronous condenser and its application to improve the power factor of a system, write a MATLAB program to design a suitable condenser to improve the power factor of a given system.
CO5	Know principle of operation and constructional details of DC machines, classify various types of DC machines based on methods of excitation and write their voltage/torque equations, distinguish the difference between variable losses and fixed losses, predict the efficiency of a DC machine at different loading condition and its maximum efficiency.
CO6	Analyse various characteristics of DC machines, properly understand and analyse various conventional speed control techniques for DC motor, design suitable field resistance for a DC generator to generate the desired voltage, design a suitable resistance to control the speed of DC motors, write a MATLAB program to determine the efficiency of DC machine at any loading condition from data obtained by conducting various tests on a DC machine.

Table 64: Mapping between COs of EET3082 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓	✓											✓		✓
CO2	✓	✓											✓		✓
CO3	✓	✓											✓		
CO4	✓	✓											✓		✓
CO5	✓	✓											✓		
CO6	✓	✓											✓		✓

Table 65: Course Outcome of EET3081

EET3081:ELECTRICAL MACHINES 1	
Course Outcome	Students will be able to
CO1	Know principle of operation and constructional details of DC machines, classify various types of DC machines based on methods of excitation and write their voltage/torque equations.
CO2	Distinguish the difference between variable losses and fixed losses, predict the efficiency of a DC machine at different loading condition and its maximum efficiency.
CO3	Analyze various characteristics of DC machines, properly understand and analyze various conventional speed control techniques for DC motor, design suitable field resistance for a DC generator to generate the desired voltage, design a suitable resistance to control the speed of DC motors.
CO4	Analyze the constructional details and operating characteristics of different types of poly-phase synchronous machines, determine the voltage regulation of three phase alternator, analyse the effect the saliency in Synchronous Machines and understand its effect in phasor diagram, determine the voltage regulation of salient pole alternator, synchronization of three phase alternator.
CO5	Understand principle of operation and constructional details of poly-phase Induction motor, analyse the torque-slip characteristics of poly-phase induction motors.
CO6	Analyse the various losses in a three-phase induction motor, design suitable rotor resistance to run a poly-phase induction motor at a particular torque and speed.

Table 66: Mapping between COs of EET3081 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓	✓											✓		
CO2	✓	✓											✓		
CO3	✓	✓											✓		
CO4	✓	✓											✓		
CO5	✓	✓											✓		
CO6	✓	✓											✓		

Table 67: Mapping between COs of EET3071 and (POs & PSOs)

EET3071:CONTROL SYSTEMS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Know the sequence for the design of feedback control systems. Determine the transfer function of linear and nonlinear systems and able to produce analogous electrical & mechanical systems.	✓												✓		
CO2:Design the state space model of linear and nonlinear systems and also determine the transfer function from state model and vice-versa. Find the transfer function of multiple subsystems using SFG.	✓				✓								✓		
CO3:Analyze the transient & steady state response of 1st & 2nd order linear and nonlinear system. Analyze and design transient response for a system consisting of multiple subsystems.	✓				✓								✓		
CO4:Create and interpret Routh table to determine the stability of a system. Find the steady state error of a LTI unity & non unity feedback system.		✓			✓								✓		✓
CO5:Design a parameter value to meet a transient response specification for 2nd and higher order system using root locus technique.	✓				✓								✓		
CO6:Determine the stability of the system using different frequency domain plots. Design compensator to improve the transient and steady state response specifications using frequency response techniques.	✓				✓										✓

Table 68: Mapping between COs of EET3113 and (POs & PSOs)

EET3113:POWER ELECTRONICS, DEVICES AND CIRCUITS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Analyse and design of Buck Converter	✓	✓	✓		✓					✓			✓	✓	✓
CO2:Analyse and design of Boost Converter	✓	✓	✓		✓					✓			✓	✓	✓
CO3:Analyse and design of Buck-Boost converter	✓	✓	✓		✓					✓			✓	✓	✓
CO4:Design of isolated DC-DC converter	✓												✓	✓	
CO5:Analyse of DC-AC Converter and develop the mathematical relation between input and output parameters.	✓	✓			✓					✓			✓		
CO6:Analyse the operation of AC-DC Converter and develop the mathematical relation between input and output parameters and apply the knowledge of mathematics and engineering principles to find the performance parameters.	✓	✓			✓					✓					



Table 69: Mapping between COs of EET3043 and (POs & PSOs)

EET3043:ELECTROMAGNETIC FIELD THEORY															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Apply the mathematical principles of vector algebra to different coordinate system and vector calculus to interpret gradient, divergence and curl.	✓												✓		
CO2:Apply Gauss's law and Coulombs law to find the electrostatic fields and potential for variety of situations including charge distributions.	✓	✓											✓		
CO3:Identify the effect of dielectric medium on the electrostatic field.	✓	✓											✓		
CO4:Apply the boundary conditions to calculate the capacitance of simple configurations.		✓			✓								✓		
CO5:Identify the basic laws (Biot-Savart's law, Ampere's Law, Curl, Faraday's law and Lorentz force) to solve magneto static problems		✓			✓								✓		
CO6:Apply the magneto-static concepts to calculate (Inductance, Magneto motive force, Reluctance, Magnetic circuits, Self and Mutual inductance) of simple configurations.		✓			✓										✓

## 2.2.4 B.Tech in Mechanical Engineering

The following PSOs are specified by the departmental board of studies.

- PSO1. Graduates of Mechanical Engineering will achieve excellence in product design, thermal engineering and manufacturing system, innovation and entrepreneurship by acquiring knowledge in mathematics, science and designing principles.
- PSO2. Graduates will be able to design an experiment as well as to analyse, interpret and provide solutions to the real-life mechanical engineering problems.
- PSO3. Graduates will be able to understand the impact of engineering solutions in a global, economic, environmental, and societal context and to use the though in the multidisciplinary problem.

Table 70: Course Outcome of MEL1103

MEL1103:Introduction to Engineering Design and Manufacturing-2	
Course Outcome	Students will be able to
CO1	Know and understand the concept of equilibrium and apply to discrete planar forces and space forces.
CO2	Analyse trusses to determine the member forces.
CO3	Determine the moment of inertia of plane areas.
CO4	Apply the equilibrium conditions to bodies involving friction.
CO5	Apply the method of virtual work to solve equilibrium problems.
CO6	Analyse the bodies in motion using laws of motion. Apply the principle of work and energy and impulse-momentum principle to study the behaviour of bodies in motion.

Table 71: Mapping between COs of MEL1103 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓									✓			✓		
CO2		✓								✓			✓	✓	
CO3	✓	✓	✓						✓	✓			✓	✓	
CO4					✓								✓		
CO5					✓								✓		
CO6									✓				✓		

Table 72: Mapping between COs of MEL1105 and (POs & PSOs)

MEL1105:COMPUTER AIDED DESIGN AND MANUFACTURING															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Able to use modelling skills to produce the fully constrained solid models for different components or elements which can be quickly modified using standard software tools like solid works CAD software.					✓							✓	✓		
CO2:Able to write G codes and M codes to operate CNC machine using CNC part programming.					✓							✓	✓		
CO3:Able to operate CNC machine for the different machining processes by the help of CAM software.					✓							✓	✓		
CO4:To develop a knowledge of appropriate parameters used for various machining operations for machining of given material into desired shape and size. Read and use engineering drawing as a definition for the manufacturing of the object.	✓												✓		
CO5:Develop a product using fundamentals of computer aided design and manufacturing using given material.			✓		✓								✓		
CO6:Perform the manufacturing of assigned project in a team effectively. Prepare a well-documented report and power point presentation on drawing and manufacturing activities of the product development.									✓	✓			✓		

Table 73: Mapping between COs of MEL1102 and (POs & PSOs)

MEL1102:INTRODUCTION TO ENGINEERING DESIGN AND MANUFACTURING 1																
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
CO1:Apply the concept of projection in Mechanical Engineering Drawings to represent the 2D and 3D view of an object using drawing tools/instruments with proper scale and standard manually with given geometrical dimensions.										✓			✓			
CO2:To visualize and depict the perspective, orthographic view and isometric view of an object										✓			✓			
CO3:To develop the knowledge of workshop practice and basic use of machine tools for marking, measuring and machining etc. using workshop tools, machines and instruments.			✓										✓			
CO4:To develop a knowledge of appropriate parameters used for various machining operations for machining of given material into desired shape and size. Read and use engineering drawing as a definition for the manufacturing of the object.			✓										✓			
CO5:Develop a product using fundamentals of drawing and manufacturing by the given material.			✓						✓	✓			✓			
CO6:Perform the manufacturing of given project in a team effectively. Prepare a well-documented report and power point presentation on drawing and manufacturing activities of the product development									✓	✓			✓			

Table 74: Mapping between COs of MEL1104 and (POs & PSOs)

MEL1104:ENGINEERING DRAWING AND WORKSHOP PRACTICE															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Apply the concept of projection in Mechanical Engineering Drawings to represent the 2D and 3D view of an object using drawing tools/instruments with proper scale and standard manually with given geometrical dimensions.										✓			✓		
CO2:To visualize and depict the orthographic view and isometric view of an object.										✓			✓		
CO3:To develop the knowledge of workshop practice and basic use of machine tools for marking, measuring and machining etc. using workshop tools, machines and instruments.			✓										✓		
CO4:To develop a knowledge of appropriate parameters used for various machining operations for machining of given material into desired shape and size. Read and use engineering drawing as a definition for the manufacturing of the object.			✓										✓		
CO5:Develop a product using fundamentals of drawing and manufacturing by the given material.			✓						✓	✓			✓		
CO6:Perform the manufacturing of given project in a team effectively. Prepare a well-documented report and power point presentation on drawing and manufacturing activities of the product development.									✓	✓			✓		

Table 75: Mapping between COs of MEL2021 and (POs & PSOs)

MEL2021:INTRODUCTORY SOLID MECHANICS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Understand the basic concepts Stress, strain of for different materials. Design and conduct experiment, and analyse the impact of engineering solutions in a global context by the use of modern tools and life-long learning.	✓												✓		✓
CO2:Know the different mechanical properties of material and analyse the stress and strain diagram for ductile and brittle materials.	✓				✓								✓		
CO3:Determination of deformation of a bar under axially loaded condition and torque loaded conditions.	✓												✓		✓
CO4:Understand concepts for determination of shear force and bending moments. Application of the concepts for representation of shear for and bending moments diagrams of different types of beams	✓				✓								✓		
CO5:Understand the concepts of transverse shear and analysis of combined loading conditions, thin and thick cylinders	✓				✓								✓		
CO6:Analysis of deflection of beams and shafts and study of buckling of columns and energy methods	✓												✓		

Table 76: Mapping between COs of MEL2003 and (POs & PSOs)

MEL2003:ENGINEERING DYNAMICS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Analyse the bodies in motion using laws of motion.	✓	✓											✓		
CO2:Apply the principle of work and energy and impulse-momentum principle to study the behaviour of bodies in motion.	✓	✓											✓		
CO3:Analyse of relative motion of bodies and respective components in a body.	✓	✓											✓		
CO4:Analyse the concept of kinematics of a body.	✓	✓											✓		
CO5:Apply the method of instantaneous centre of velocity to solve kinematic problems.	✓	✓											✓		
CO6: i. Analyse problems of conservation of linear impulse and momentum. ii. Analyse problems of relative motion of components in a body.	✓	✓											✓		

Table 77: Mapping between COs of MEL4013 and (POs & PSOs)

MEL4013:APPLIED THERMODYNAMICS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Application of First and Second Law of Thermodynamics in a thermodynamic system, Study the working principle of steam power plant based on Rankine cycle including the effect of enhancement such as superheat, reheat and regeneration. Performance calculations of Rankine cycle with and without enhancements	✓												✓		
CO2:Study the working principle of Gas turbine plants based on Brayton cycle including the effect of enhancement such as reheat, regeneration and Intercooler and Performance calculations with and without enhancements.	✓	✓											✓	✓	
CO3:Calculate the performance of Air Standard Otto, Diesel and Dual cycle and study the working principle of single and multi-stage reciprocating air compressor and compute their performances.	✓	✓											✓	✓	
CO4:Study the basic concepts and functions of Vapor compression, Vapor absorption and air refrigeration system and to calculate the performance of each cycles and Study of the classification of refrigerant and designation of refrigerants.	✓	✓		✓						✓			✓	✓	✓
CO5:Study properties of moist air, Psychrometric properties, Psychrometric relations and processes, comfort air conditioning.	✓	✓		✓						✓			✓	✓	✓
CO6:Draw velocity triangle and use vector algebra to calculate power, degree of reaction, utilization factor and dimensions of different parts of fluid-machinery (hydraulic and steam turbine).	✓	✓		✓						✓			✓	✓	✓



Table 78: Mapping between COs of MEL2011 and (POs & PSOs)

MEL2011:INTRODUCTORY THERMODYNAMICS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Understand the basic concepts of thermodynamic such as temperature, pressure, system, properties, process, state, cycles, equilibrium, analyze basic property diagrams of pure substances and obtain the data from property tables and equations of state for gases.	✓	✓													✓
CO2:Determine the energy transfer in the form of heat and work through the system boundary and the control surface of a control volume.	✓	✓											✓		
CO3:Apply the 1st Law of Thermodynamics on closed and steady flow steady state, control volume systems including mass conservation and to find heat, work, and changes in internal energy and enthalpy for the analysis of any system.	✓	✓											✓		
CO4:Apply Second Law of Thermodynamics and entropy production in analyzing the thermal efficiencies of reversible and irreversible heat engines and the coefficients of performances for reversible and irreversible refrigerators and heat pump including the formulation of thermodynamic relations involving the change in entropy.	✓		✓										✓	✓	
CO5:Perform thermodynamic analysis of gas power cycle such as Carnot, Brayton, Otto, Diesel, jet propulsion without and with losses and be able to calculate the performances for these cycles.	✓	✓											✓	✓	
CO6:Perform thermodynamic analysis of vapour power cycles such as Carnot, Rankine and vapour compression refrigeration cycles without and with losses and be able to calculate the performances for these cycles.	✓		✓										✓	✓	

Table 79: Mapping between COs of MEL1003 and (POs & PSOs)

MEL1003:ENGINEERING STATICS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Know and understand the concept of vector analysis of planar forces and distributed forces.	✓	✓											✓		
CO2:Know and understand the concept of equilibrium and apply to discrete planar forces and space forces	✓	✓											✓		
CO3:Analyse trusses to determine the member forces.	✓	✓											✓		
CO4:Apply the equilibrium conditions to bodies involving friction.	✓	✓											✓		
CO5:Determine the centroid and moment of inertia of plane areas.	✓	✓											✓		
CO6:Apply the method of virtual work to solve equilibrium problems.	✓	✓											✓		

Table 80: Mapping between COs of MEL1002 and (POs & PSOs)

MEL1002:STATICS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Know and understand the concept of vector analysis of planar forces and distributed forces.	✓	✓											✓		
CO2:Know and understand the concept of equilibrium and apply to discrete planar forces and space forces	✓	✓											✓		
CO3:Analyse trusses to determine the member forces.	✓	✓											✓		
CO4:Apply the equilibrium conditions to bodies involving friction.	✓	✓											✓		
CO5:Determine the centroid and moment of inertia of plane areas.	✓	✓											✓		
CO6:Apply the method of virtual work to solve equilibrium problems.	✓	✓											✓		

Table 81: Mapping between COs of MEL4111 and (POs & PSOs)

MEL4111:DESIGN AND ANALYSIS OF TURBOMACHINERY															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Apply the knowledge of Differential calculus to calculate Thermodynamic property relation	✓	✓											✓	✓	
CO2:Apply various thermodynamic processes in comparing minimum work consumption	✓	✓											✓	✓	✓
CO3:Understand the basic concept of fluid mechanics, application to fluid Machinery	✓	✓											✓	✓	
CO4:Using the theoretical approach of Turbo –machines and velocity diagrams for axial turbo machines to calculate the different related parameters	✓	✓											✓	✓	✓
CO5:Performance analysis of axial flow turbines and compressors	✓	✓											✓	✓	✓
CO6:Apply the knowledge energy conservation to Turbo-Machines	✓	✓											✓		

Table 82: Mapping between COs of MEL4036 and (POs & PSOs)

MEL4036:OPERATIONS RESEARCH															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Understand the basic concepts of LP. Model formulation and computation in Linear Programming. Compute graphical solution, Simplex method and Dual Simplex Method for solving LPP.	✓	✓											✓		
CO2:Compute simplex-based sensitivity analysis followed by post optimal analysis of problems. Compute transportation model problems.		✓			✓								✓		
CO3:Understand Network Diagram and compute network problems like PERT & CPM.		✓			✓								✓		
CO4:Compute optimum solution to multi variant problem using Dynamic Programming method.	✓	✓											✓		
CO5:Understand the importance of operation management, material requirement planning and production planning. Compute forecasting and inventory and inventory control problems.		✓			✓									✓	
CO6:Compute probability and queuing system problems. Knowledge about various quality assurance and statistical quality methods. Compute simulation problems and quality control problems.		✓			✓									✓	

Table 83: Mapping between COs of MEL4024 and (POs & PSOs)

MEL4024:INTERMEDIATE DYNAMICS 2															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Work with basic engineering problems related to particle dynamics using Lagrangian approach.	✓	✓											✓		
CO2:Use the balance laws to examine models for several physical systems ranging from planetary motion to a model for a roller coaster.	✓	✓	✓	✓										✓	
CO3:Derive Lagrange's equations of motion a system of particles.	✓	✓			✓								✓		
CO4:Understand integrable and nonintegrable constraints and the constraint forces associated with them.	✓	✓		✓									✓		
CO5:Apply Lagrange's equations to study dynamics of systems of Particles.	✓	✓			✓								✓		✓
CO6: i. Understand the requirement of kinematic quantities for characterizing the motion of a rigid body. ii. Understand the Balance Laws and Lagrange's Equations of Motion for system of particles.	✓	✓											✓		✓

Table 84: Mapping between COs of MEL4021 and (POs & PSOs)

MEL4021:CONTROL SYSTEMS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Know the sequence for the design of feedback control systems. Determine the transfer function of linear and non-linear systems and able to produce analogous electrical & mechanical systems.	✓												✓		
CO2:Design the state space model of linear and nonlinear systems and also determine the transfer function from state model and vice-versa. Find the transfer function of multiple subsystems using SFG.	✓				✓								✓		
CO3:Analyze the transient & steady state response of 1st & 2nd order linear and nonlinear system. Analyze and design transient response for a system consisting of multiple sub-systems.	✓				✓								✓		
CO4:Create and interpret Routh table to determine the stability of a system. Find the steady state error of a LTI unity & non unity feedback system.		✓			✓								✓		✓
CO5:Design a parameter value to meet a transient response specification for 2nd and higher order system using root locus technique.		✓			✓								✓		
CO6:Determine the stability of the system using different frequency domain plots. Design compensator to improve the transient and steady state response specifications using frequency response techniques.		✓			✓										✓

Table 85: Mapping between COs of MEL3213 and (POs & PSOs)

MEL3213:NEWTONIAN FLUID MECHANICS																
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
CO1:Determine the forces exerted on plane and curved surfaces submerged in static fluid, analyse different submerged structure. Determine and analyse the metacentre and analyse the stability of partially or fully submerged body.	✓												✓			
CO2:Understand the concept of fluid properties, fluid flow behaviour and analyse different forces acting on fluid flow (internal and external surfaces) for different application. Compute and analyse different kinematic properties to visualize the flow of fluid in different applications numerically	✓				✓								✓			
CO3:Understand the principle of Reynolds Transport theorem (Leibniz theorem), Apply conservation of mass, momentum and energy on different applications (sprinkler, rotary machines). Analyse the forces, power of different rotodynamic machines.	✓												✓			
CO4:Determine the different losses and pressure drop in flow through pipes, Determine the pumping power, Analyse different flow measuring devices analytically and experimentally, compare the flow rate. Use design of experiments techniques to determine optimised output parameters for a setoff input parameters in different flow measuring devises and impact of jet experiments.	✓				✓									✓	✓	
CO5:Use dimensional analysis to generate non-dimensional number, Analyse similarity analysis to compare performance of model and prototype.	✓															
CO6:Use knowledge of calculus to derive the differential form of conservation equations such as mass, momentum and energy and solve analytically and numerically, to compute different flow field in both internal and external flow.	✓				✓					✓			✓		✓	



Table 86: Mapping between COs of MEL3101 and (POs & PSOs)

MEL3101:INTEGRATED DESIGN AND MANUFACTURING PROJECT															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:The student will be able to design a complex system with considerations for the public health and safety, and the cultural, societal, and environmental considerations.	✓	✓	✓	✓	✓								✓	✓	✓
CO2:The student will be able to identify, review research literature, and analyze complex engineering problems using first principles of engineering sciences.			✓										✓	✓	✓
CO3:The student will be able to create solid models, select and apply SOLIDWORKS and MASTERCAM software to complex engineering activities.	✓	✓											✓	✓	
CO4:The student will be able to apply contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.			✓												✓
CO5:The student will be able to apply ethical principles and professional ethics and responsibilities of the engineering practice.		✓		✓	✓				✓	✓	✓	✓			✓
CO6:The student will be able to communicate effectively on complex engineering activities and to be able to comprehend and write effective reports and design documentation.						✓	✓		✓					✓	

Table 87: Mapping between COs of MEL3032 and (POs & PSOs)

MEL3032:DESIGN AND DYNAMICS 2															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Understand and learn the basics of the Linkage mechanisms.										✓					
CO2:Understand the basic principle of design, synthesis of linkages to visualize the exact path of motion, and to create a mechanism.	✓	✓		✓		✓	✓						✓	✓	✓
CO3:Understand, analyse the kinematics of the mechanisms	✓	✓	✓	✓	✓	✓	✓		✓						✓
CO4:Understand the basic requirement of a cam mechanism. Learn the principles of cam design.		✓	✓	✓	✓				✓						✓
CO5:Understand the principles of Static and Dynamic modelling of complex machine parts or mechanisms for design analysis.		✓	✓	✓	✓				✓						✓
CO6:Understand and analyse the static and dynamic forces in engine parts and learn the basic principles of design of multi-cylinder engines.		✓	✓	✓	✓				✓						✓

Table 88: Mapping between COs of MEL3031 and (POs & PSOs)

MEL3031:DESIGN AND DYNAMICS 1															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Understand and analyze the basic principles of Solid Mechanics concerning equilibrium, stress, strain and deflection.		✓											✓		
CO2:Understand and analyze the basic principles of Solid Mechanics concerning static and fatigue failure theories.		✓												✓	✓
CO3:Understand, analyze and design shafts, keys and couplings.		✓	✓	✓	✓				✓						✓
CO4:Understand, analyze and design gears and gear trains.		✓	✓	✓	✓				✓						✓
CO5:Understand, analyze and design springs, screws and fasteners.		✓	✓	✓	✓				✓						✓
CO6:Understand, analyze and design clutches and brakes.		✓	✓	✓	✓				✓						✓

Table 89: Mapping between COs of MEL3023 and (POs & PSOs)

MEL3023:INTERMEDIATE DYNAMICS 1															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:The student will be able to perform basic engineering problems related to particle dynamics using Newton–Euler approach.	✓									✓			✓		
CO2:The student will be able to perform balancing of rotational bodies under the action of conservative and constraint forces.		✓								✓			✓		
CO3:The student will be able to analyse and interpret kinematic of rigid bodies	✓	✓								✓			✓		
CO4:The student will be able to apply Euler’s Theorem on Motion of a Rigid Body		✓								✓		✓	✓	✓	
CO5:The student will be able to analyse and interpret motion of bodies subjected to simultaneous motion of rotation and translation	✓				✓					✓			✓		
CO6:The student will be able to balance the unbalanced masses in rotation		✓			✓					✓			✓	✓	

Table 90: Mapping between COs of MEL3022 and (POs & PSOs)

MEL3022:PRINCIPLES OF MICROECONOMICS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Understand the principle of vector algebra and tensor.	✓	✓											✓		
CO2:Know and understand the concept of static equilibrium.	✓	✓											✓		
CO3:Apply equilibrium condition to bodies involving friction and study about friction models.	✓	✓											✓		
CO4:Apply the physical principle of the centre of mass to various geometry problems.	✓	✓											✓		
CO5:Know and understand the concept of kinematics of rigid bodies	✓	✓											✓		
CO6:Develop the planar kinetic equations of motion for the rigid body undergoing translation, rotation and general plane motion.	✓	✓											✓		

Table 91: Mapping between COs of MEL3211 and (POs & PSOs)

MEL3211:FLUID MECHANICS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Determine the forces exerted on plane and curved surfaces submerged in static fluid, analyze different submerged structure. Determine and analyze the metacenter and analyze the stability of partially or fully submerged body.		✓												✓	
CO2:Understand the concept of fluid properties, fluid flow behaviour and analyze different forces acting on fluid flow (internal and external surfaces) for different application. Compute and analyze different kinematic properties to visualize the flow of fluid in different applications numerically	✓				✓									✓	
CO3:Understand the principle of Reynolds Transport theorem (Leibniz theorem), Apply conservation of mass, momentum and energy on different applications (sprinkler, rotary machines). Analyze the forces, power and performance of different roto- dynamic machines. Design, model, simulate different roto-dynamic machines.	✓		✓		✓				✓	✓			✓		
CO4:Determine the different losses and pressure drop in flow through pipes, Determine the pumping power, Analyze different flow measuring devices analytically and experimentally, compare the flow rate.				✓										✓	✓
CO5:Use dimensional analysis to generate non-dimensional number, Analyze similarity analysis to compare performance of model and prototype.		✓												✓	
CO6:Use knowledge of calculus to derive the differential form of different conservation equations and solve analytically, to compute different flow field in both internal and external flow.	✓													✓	✓

## 2.2.5 B.Tech in Civil Engineering

The following PSOs are specified by the departmental board of studies.

- PSO1. By the completion of Civil Engineering program the students will be able to design and build civil engineering based systems in the context of environmental, economical, and societal requirements. Graduates will be able to design an experiment as well as to analyse, interpret and provide solutions to the real-life mechanical engineering problems.
- PSO2. By the completion of Civil Engineering program the students will be able to identify research gaps and hence provide innovative solutions to Civil engineering problems and engage in life-long learning for professional growth.
- PSO3. By the completion of Civil Engineering program the students will be able to serve the community as ethical and responsible professionals.

Table 92: Course Outcome of CVL1011

CVL1011:ENGINEERING MECHANICS	
Course Outcome	Students will be able to
CO1	Understand the concept of equilibrium and apply to discrete planar forces and space forces.
CO2	Analyse trusses to determine the member forces.
CO3	Determine the moment of inertia of plane areas.
CO4	Apply the equilibrium conditions to bodies involving friction.
CO5	Apply the method of virtual work to solve equilibrium problems.
CO6	Apply the principle of work and energy and impulse-momentum principle to study the behaviour of bodies in motion.

Table 93: Mapping between COs of CVL1011 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓	✓											✓		
CO2	✓	✓											✓		
CO3	✓	✓											✓		
CO4	✓	✓											✓		
CO5	✓	✓											✓		
CO6	✓	✓											✓		

Table 94: Mapping between COs of CVL1205 and (POs & PSOs)

CVL1205:SURVEYING															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Understand the fundamentals of surveying, apply to solve engineering problems using Chain, Tape, Compass and calculate various errors involved in linear and angular measurement.	✓												✓		
CO2:Use the principles of levelling, apply to solve engineering problems using levelling instruments and solve traversing problems in surveying using plane table and theodolite.	✓	✓	✓						✓		✓		✓		
CO3:Apply the methods for calculating area, volume and errors arising in measurements.		✓	✓							✓			✓		
CO4:Set out simple and compound curves in field using various methods.		✓	✓			✓			✓		✓	✓	✓		✓
CO5:Understand and apply the concept of photogrammetry in surveying.		✓		✓	✓	✓				✓		✓	✓	✓	✓
CO6:Understand the principles and use modern instruments like total station ,DGPS ,EDM instruments.		✓	✓	✓	✓			✓	✓		✓	✓		✓	✓



Table 95: Mapping between COs of CVL1209 and (POs & PSOs)

CVL1209:SURVEYING AND GEOMATICS ENGINEERING															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Understand the fundamentals of surveying for linear and angular measurements, basic concepts of GIS, GPS and remote sensing, identify data collection methods and prepare field notes.	✓				✓				✓				✓		
CO2:Describe the principles of photogrammetry, GIS, GPS and remote sensing and use of modern instruments viz. total station and DGPS for surveying.	✓								✓	✓			✓		
CO3:Demonstrate the procedure for locating points on ground, measure the dimensions and angles in vertical and horizontal plane to arrive at solutions to the basic surveying problems.	✓				✓				✓				✓		
CO4:Survey an area using different methods of traversing, record the reduced levels using various methods of levelling and measure the horizontal& vertical angles by Theodolite.	✓								✓	✓			✓	✓	
CO5:Set out simple and compound curves in field using various methods, interpret survey data and compute areas and volumes.	✓								✓	✓			✓		
CO6:Design and implement different types of curves for deviating type of alignments, analyse the errors involved in various types of survey and perform required corrections.	✓								✓	✓			✓		

Table 96: Mapping between COs of CVL2211 and (POs & PSOs)

CVL2211:INTRODUCTORY SOLID MECHANICS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Understand the concept of different types of stresses	✓	✓											✓		
CO2:Analyse members corresponding to axial tensile force	✓	✓											✓		
CO3:Analyse members corresponding to bending	✓	✓											✓		
CO4:Analyse members subjected to torsion	✓	✓											✓		
CO5:Determine the principal stresses corresponding to compound stress condition	✓	✓											✓		
CO6:Analyse thin cylinders and curved bars for determining the stresses.	✓	✓											✓		

Table 97: Mapping between COs of CVL2013 and (POs & PSOs)

CVL2013:MATERIALS, MATERIALS TESTING AND EVALUATION															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Gain basic technical knowledge of construction materials such as stone, brick, cement, clay products, ceramic products, polymers; cement concrete, timber, acoustic and thermal insulating materials, Asphalt, bitumen and tar.	✓		✓										✓		
CO2:Develop knowledge about the fundamental properties and selection of building materials, sustainable building materials and alternative building materials for low cost housings					✓								✓		✓
CO3:Understand the manufacturing aspects of bricks, tools and equipment involved for manufacturing process of bricks, machines and machineries involved for quarrying and dressing of stones, equipments required for cutting of timber and seasonings and other cement concrete products.	✓										✓			✓	
CO4:Acquire the knowledge of application of finishing items such as plastering, white washing and application of paints, distempers, varnishes and allied finishes, acoustic and thermal insulating materials, asphalt, bitumen and tar. Also check the applicability of building materials such as bricks in brick masonry, stones in stone masonry, cement concrete works and timbers for making of roof trusses and wood works in construction sectors.	✓				✓			✓					✓		
CO5:Analyze the properties of good building stones as coarse aggregates and fine aggregates for suitability for construction works, acoustic and thermal insulating materials, asphalt, bitumen and tar, timber, bricks, cement and sustainable materials.		✓											✓		
CO6:Evaluate the quality control of construction and building materials by analyzing the physical properties of materials, fresh and hardened concrete properties and their suitability.		✓			✓										✓

Table 98: Mapping between COs of CVL1012 and (POs & PSOs)

CVL1012:COMPUTER AIDED DRAWING AND DESIGN															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Understand basic concepts of the AutoCAD and Civil 3D.	✓												✓		
CO2:Draw Circle, Arc, Rectangle, Fillet, Chamfer, Ellipse etc. using AutoCAD					✓								✓		
CO3:Construct Geometric Dimensioning, Projection, Tolerancing and Isometric Drawings					✓								✓		
CO4:Work with Blocks, Defining Block Attributes, Understand External References					✓								✓		
CO5:Analyze Points, Surface Volumes Analysis, Alignments, Profiles, Corridors and Parcels					✓								✓		
CO6:Create Lines, Grading, Pipe Networks, Pressure Networks and Plan production					✓								✓		

Table 99: Mapping between COs of CVL1013 and (POs & PSOs)

CVL1013:CIVIL ENGINEERING WORKSHOP PRACTICE															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Develop basic technical knowledge of construction activities such as excavation, brick masonry, converting, concrete laying and mixing, carpentry, welding, plumbing and finishing works by inspecting various construction sites.	✓												✓		
CO2:Gain knowledge about importance and interdependency of various activities and technical aspects involved in workmanship and safety precautions.	✓												✓		
CO3:Understand the technical aspects, tools and equipment involved in workmanship of brick masonry, concrete laying and mixing, plastering, pointing, carpentry, welding, plumbing and finishing works.	✓	✓											✓		
CO4:Demonstrate the graphical skills for communication of concepts, ideas and design of engineering products through technical drawings.		✓											✓		
CO5:Apply the acquired knowledge of brick masonry, plastering, pointing, carpentry, welding, plumbing and finishing works to handle tools and instruments and use them for preparing various bonds, jobs such as joineries, welds, pipe networks etc. of specific shape and size.		✓											✓		
CO6:Able to construct and interpret appropriate drawing scale as per the situation by using common drafting tools.		✓	✓										✓		

Table 100: Mapping between COs of CVL1001 and (POs & PSOs)

CVL1001:Introduction to Engineering Drawing and Design															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Understand basic concepts of the AutoCAD and Civil 3D													✓		
CO2:Draw Circle, Arc, Rectangle, Fillet, Chamfer, Ellipse etc. using AutoCAD	✓				✓								✓		
CO3:Construct Geometric Dimensioning, Projection, Tolerancing and Isometric Drawings					✓								✓		
CO4:Work with Blocks, Defining Block Attributes, Understand External References					✓								✓		
CO5:Analyze Points, Surface Volumes Analysis, Alignments, Profiles, Corridors and Parcels					✓								✓		
CO6:Create Lines, Grading, Pipe Networks, Pressure Networks and Plan production					✓								✓		

Table 101: Mapping between COs of CVL4121 and (POs & PSOs)

CVL4121:REINFORCED CONCRETE DESIGN															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Generalise the guiding principles of the serviceability limit state and the ultimate limit state concepts and how they relate to the design of structures.	✓														
CO2:Identify reinforced concrete failure modes from crack patterns	✓				✓			✓							
CO3:Analyze and design reinforced concrete flexural member (beam), one-wayslab and two-way slab.	✓	✓			✓			✓				✓	✓		✓
CO4:Analyse and design for shear in reinforced concrete	✓	✓			✓			✓	✓			✓	✓		✓
CO5:Apply fundamental mechanics to the design of reinforced concrete columns at the ultimate limit state including determination strength under uniaxial and biaxial bending.	✓	✓			✓			✓	✓			✓	✓		✓
CO6:Utilize the relevant software in the analysis and design of reinforced concrete members.	✓	✓			✓			✓	✓			✓	✓		✓

Table 102: Mapping between COs of CVL3251 and (POs & PSOs)

CVL3251:DESIGN OF EXPERIMENTS IN CIVIL ENGINEERING															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Understand the requirement of Strategy of experimentation and principles.	✓													✓	
CO2:Understand the basic statistical concepts sampling distributions.	✓													✓	
CO3:Understand the concept of Hypothesis testing, choice of sample size and confidence intervals and its application in Civil Engineering problems.	✓			✓						✓				✓	
CO4:Understand the concept analysis of variance and one factor analysis of variance and its application in Civil Engineering problems	✓			✓						✓				✓	
CO5:Understand the concept of Two-Factor analysis of variance and its application in Civil Engineering problems	✓			✓						✓				✓	
CO6:Understand the concept of Regression and its application in Civil Engineering problems	✓			✓						✓				✓	



Table 103: Mapping between COs of CVL3232 and (POs & PSOs)

CVL3232:SOIL MECHANICS AND FOUNDATION ENGINEERING															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Understand major concepts of index and engineering properties of soil.	✓														
CO2:Develop analytical and problem-solving skills using scientific techniques to determine various soil properties.	✓														
CO3:Recognize various soil classification systems, classify and characterize soil.	✓											✓			
CO4:Understand the concepts of compaction and consolidation settlements.	✓											✓			
CO5:Demonstrate the ability to execute experiments that determines the use and understanding of various equipment, accurate quantitative measurements and appropriate recording skills.	✓								✓			✓			✓
CO6:Analyze and design various types of foundation.	✓	✓	✓		✓				✓			✓	✓		✓

Table 104: Mapping between COs of CVL3211 and (POs & PSOs)

CVL3211:CIVIL ENGINEERING MATERIALS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Classify a material based on its stress-strain behavior and calculate various physical quantities related to stress-strain behavior	✓														
CO2:Identify the raw materials and chemical composition of cement and their effects on its properties. Also know about various types of cements.	✓														
CO3:Compute composition of a concrete mix to economize use of raw materials.	✓	✓										✓	✓		✓
CO4:Demonstrate concepts about bitumen and aggregate mixes for pavement construction.	✓														
CO5:Classify different types of bricks based on various aspects and describe the manufacturing process of brick.	✓														
CO6:Choose economical replacement of steel with non-ferrous materials.	✓											✓			

Table 105: Mapping between COs of CVL3161 and (POs & PSOs)

CVL3161:CONSTRUCTION MANAGEMENT															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1: Demonstrate an understanding of the roles and responsibilities of the Owner, Designer and Contractor in various design and construction processes										✓	✓				✓
CO2: Demonstrate an understanding of Construction Documents: drawings, technical specifications and various construction contract forms.											✓		✓		✓
CO3: Demonstrate an understanding of construction cost estimating, construction planning & scheduling, construction quality assurance and construction safety.											✓		✓		✓
CO4: Demonstrate an understanding of appropriate communications, reporting, record keeping and various other construction project management functions.											✓		✓		✓
CO5: Apply global, ethical, and sustainability perspectives to construction management knowledge and to work effectively with others.							✓	✓					✓		✓
CO6: Graduates will demonstrate knowledge of current information, theories and models, and techniques and practices in all of the major business disciplines including the general areas of Accounting and Finance, Information Technologies, Management, Marketing, and Quantitative Analysis.					✓								✓	✓	✓

Table 106: Mapping between COs of CVL3161 and (POs & PSOs)

CVL3071:TRAFFIC AND HIGHWAY ENGINEERING															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Learn the milestones in the highway development and various factors influencing transportation systems	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Understand the geometric design of highway facilities	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:Understand the causes of highway crashes and issues involved in highway safety.	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Analyze traffic operations on roads and at junctions for optimal design and performance of transportation facilities	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:Understand pavement materials and pavement design	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO6:Understand the major elements of the urban transportation planning process and how the process influences decision making	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 107: Mapping between COs of CVL3053 and (POs & PSOs)

CVL3053:ENVIORNMENTAL ENGINEERING FOR CE															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Ability to understand the concepts of water chemistry, population forecast and distribution system	✓												✓		
CO2:Ability to understand different water quality parameters, water treatment and unit operations involved	✓						✓						✓		
CO3:Ability to analyze the wastewater characteristics and the required treatment level	✓						✓						✓		
CO4:Ability to design different biological reactors			✓				✓						✓		✓
CO5:Ability to understand the atmospheric behavior and dispersion of pollutants			✓				✓							✓	
CO6:Ability to analyze noise pollution and solid waste management			✓				✓								✓

Table 108: Mapping between COs of CVL3011 and (POs & PSOs)

CVL3011:STRUCTURAL ANALYSIS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Apply knowledge of fundamentals of Introductory solid mechanics to determine support reactions and determinacy of structure.	✓	✓													
CO2:Learn the concepts of various type of structural forms, loads, and stability of structure.	✓	✓													
CO3:To analyze statically determinate structures like truss, beams and Frames.	✓	✓										✓			
CO4:Perform an accurate analysis to know the response of the structure which will be helpful in design of the structural components of structures.	✓	✓										✓			
CO5:To analyze statically indeterminate structures.	✓	✓										✓			
CO6:Understand the concept of influence lines and also will be able to apply it for girders, and trusses.	✓	✓										✓			

Table 109: Mapping between COs of CHM1002 and (POs & PSOs)

CHM1002:ENVIRONMENTAL STUDIES															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Ability to understand the Environment, its importance, atmospheric cycles, environmental resources, biodiversity, its values and conservation strategies	✓														✓
CO2:Ability to distinguish different types of pollutants (air, water and noise), their measurement, standard and analyze the pollution control strategy	✓												✓		
CO3:Ability to understand the scientific management of solid waste and evaluate various important parameters	✓														✓
CO4:Ability to understand different contemporary issues related to environment, their mitigation measures, environmental legislations and their application for sustainable development		✓													✓
CO5:Ability to recognize and understand different measures to control the natural disaster	✓			✓											✓
CO6:Ability to understand the application of IT to monitor environmental and human health, recognize the impact of population on environment and to design basic experiments to understand the specific Environmental Problems and Propose the solution	✓			✓									✓		✓

Table 110: Mapping between COs of CHM1004 and (POs & PSOs)

CHM1004:ENVIRONMENTAL CHEMISTRY															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Demonstrate knowledge of chemical and biochemical principles of fundamental environmental processes in air, water, and soil	✓												✓		
CO2:Recognize different types of toxic substances & responses and analyze toxicological information.	✓												✓		
CO3:Apply basic concepts of chemical thermodynamics, kinetics, and photochemistry to analyze chemical processes involved in different environmental problems.	✓												✓		
CO4:Use of Henderson equation to calculate the concentrations of acid-conjugate base pair required to prepare acidic and basic buffer solutions and measurement of pH		✓													
CO5:Combine experimental results of inorganic qualitative analysis of individual ions to interpret the composition of a given mixture	✓			✓											
CO6:Analyze data using graphical techniques to synthesize methods in order to calculate the rate constant of hydrolysis of ester.	✓			✓											



## 2.2.6 Mathematics

The following PSOs are specified by the departmental board of studies.

PSO1. Apply the knowledge of mathematics, science, engineering fundamentals, to the solution of complex Mathematical problems.

PSO2. Identify, formulate and analyse complex Mathematical problems reaching substantiated conclusions using first principles of mathematics.

Table 111: Course Outcome of MTH2001

MTH2001:CALCULUS II	
Course Outcome	Students will be able to
CO1	Use the knowledge of three dimensions and vectors to describe the region, lines planes and surfaces.
CO2	Use the knowledge of curve, curvature, tangent, normal to describe the bending i.e radius of curvature and equation of tangent plane.
CO3	Apply the concept of function of several variables to find the limit, derivative, directional derivative, linearization and maxima minima.
CO4	Apply the concept of double and triple integration to evaluate the volume of the solid, moment of inertia of lamina and surface area of the solid.
CO5	Apply the concept of Green's theorem to evaluate the line integral and area of surfaces. Apply the Stoke's theorem and the divergence theorem to evaluate double and triple integrals.
CO6	Apply the concept of curl, divergence to test conservation of vector field and rotation of the fluid.

Table 112: Mapping between COs of MTH2001 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓	✓												
CO2	✓	✓												
CO3	✓	✓												
CO4	✓	✓												
CO5	✓	✓												
CO6	✓	✓												

Table 113: Mapping between COs of MTH1001 and (POs & PSOs)

MTH1001:CALCULUS-I														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1:Use limit laws to evaluate the limit of a function and demonstrate the existence of limit and continuity of functions.	✓	✓												
CO2:Compute slope of tangent lines and derivatives by different techniques and apply the concept of derivatives for linearization of functions and solve various physical and engineering problems.	✓	✓												
CO3:Discuss the Mean Value Theorems and study maximum and minimum values of function as well as apply L' Hospital's rule to evaluate limits of functions and sketch curves of functions.	✓	✓												
CO4:Compute indefinite integrals using techniques of integration and apply it to physical and Engineering problems.	✓	✓												
CO5:Apply the concept of integration to find volume, work done, surface area, arc lengths etc. and average value of an integral and use approximation to find integration numerically using different methods.	✓	✓												
CO6:Analyze infinite series and sequences and discuss their convergences using comparison test, root test and ratio test.	✓	✓												

Table 114: Mapping between COs of MTH1002 and (POs & PSOs)

MTH1002:INTRODUCTION TO CALCULUS AND ANALYSIS														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1:To apply knowledge of set theory.	✓												✓	
CO2:To apply knowledge of relations, functions.	✓												✓	
CO3:To analyze functions and explain the concept of definite integrals to find the area of a closed figure.	✓												✓	
CO4:To apply knowledge of definite integrals to solve some geometrical and mechanical problems		✓												
CO5:To analyze the continuity and differentiability of functions and their relations with integrals.		✓												
CO6:To apply concept of differential calculus.		✓												

Table 115: Mapping between COs of MTH3004 and (POs & PSOs)

MTH3004:DIFFERENTIAL EQUATIONS														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1:Combine principles of differential calculus to formulate and solve models of exponential growth and decay, Newton's law of heating and cooling.	✓													✓
CO2:Calculate the approximate solution and compare with exact solution of IVPs using Euler, Improved Euler and Runge - Kutta method.	✓												✓	
CO3:Apply the method of Wronskians and method of undetermined coefficients to solve the higher order non homogeneous linear differential equations.	✓												✓	
CO4:Apply the method of linear algebra specifically Eigen values and Eigen vectors to solve linear system of differential equations.		✓											✓	
CO5:Compute the Laplace transform Periodic and Piecewise continuous Input Functions, Impulse and Delta Functions, and use to solve the initial value problems		✓												✓
CO6:Understand the basic principle of sequences and series and their application in solution of differential equation.	✓													✓

Table 116: Mapping between COs of MTH2002 and (POs & PSOs)

MTH2002:PROBABILITY AND STATISTICS														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1:Apply probability axioms to compute probability and conditional probability.	✓	✓											✓	
CO2:Define random variables and compute probability distributions, joint & marginal distribution.	✓	✓											✓	
CO3:Compute expectation of random variables, the moments and find moment generating functions.	✓												✓	
CO4:Discuss discrete probability distribution viz: Binomial, Poisson & Hypergeometric and continuous probability distribution distributions viz: Uniform, Norma, Gamma & Exponential.	✓	✓												✓
CO5:Estimate the population mean and variance of a normal distribution by point and interval estimation.	✓													✓
CO6:Infer about population parameter through hypothesis testing with the help of a random sample. Analyze linear regression and co-relation		✓												

Table 117: Mapping between COs of MTH4002 and (POs & PSOs)

MTH4002:NUMERICAL METHODS														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1:Discuss the different types of computational errors and number systems for machine use.	✓												✓	
CO2:Demonstrate understanding of common numerical methods and how they are used to obtain approximate solutions.	✓				✓								✓	
CO3:Apply numerical methods to obtain approximate real and complex zeros of algebraic and transcendental equations.	✓				✓								✓	
CO4:Demonstrate and apply numerical methods to obtain solutions to system of linear equations.		✓			✓								✓	✓
CO5:Apply difference properties for various functions and use them for construction of polynomials.		✓			✓								✓	
CO6:Construction of polynomials using function values and various order of derivatives and Application of integration to get approximate solution.		✓			✓									✓

Table 118: Mapping between COs of MTH3003 and (POs & PSOs)

MTH3003:APPLIED LINEAR ALGEBRA														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1:Apply Gauss elimination principle to solve system of linear equations and elementary matrices to get LU & LDU factorization of a matrix.	✓	✓												
CO2:Explain vector space, subspace, null space and column space, linear independence, basis and dimension of vector space and four fundamental subspaces, linear transformations and their applications	✓	✓										✓		
CO3:Explain orthogonality and its applications to find best fit solutions by least squares. Apply properties of determinants to solve the system of equations	✓	✓										✓		
CO4:Explain eigenvalues and eigenvectors and their application to solve system of differential equations and apply it to complex matrices, diagonalization of matrix and similarity transformations	✓	✓										✓		
CO5:Examine the positive definiteness of a form and its applications to test the extreme points, Singular Value Decomposition and pseudoinverse.	✓	✓										✓		
CO6:Identify and analyse the norm and condition number of a matrix to measure the sensitivity of a problem.	✓	✓												

Table 119: Mapping between COs of MTH4001 and (POs & PSOs)

MTH4001:COMPLEX ANALYSIS														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1:Explain the complex plane and elementary functions.	✓													
CO2:Explain the ideas of limit, continuity, differentiability of complex functions and also the analytic functions.	✓				✓									
CO3:Applying the Cauchy-Riemann equation, Laplace equation to find the Harmonic conjugate function and its corresponding analytic function.	✓				✓									
CO4:Analyze the families of level curves, conformal mapping and various Linear fractional transformation.	✓													
CO5:Analyze the techniques of integration in the complex plane and apply it to evaluate integration of complex function over various closed paths using Cauchy's theorems.	✓				✓									
CO6:Determine the power series, Laurent series and radius of convergence. Explain residues and apply residue theorem to evaluate various improper integrals, integrals of trigonometric functions, Rational functions and fractional residues.	✓				✓									



Table 120: Mapping between COs of MTH3009 and (POs & PSOs)

MTH3009:PARTIAL DIFFERENTIAL EQUATIONS														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1:Formulate the Fourier series and compute the coefficient of the Fourier series for the Rectangular wave, half wave rectifier and Saw tooth wave.	✓	✓										✓		
CO2:Apply canonical transformation method to reduce the second order PDEs and find the analytic solution.	✓	✓										✓		
CO3:Solve one dimensional parabolic and hyperbolic equation using separation variable method along with Fourier series method.	✓	✓										✓	✓	✓
CO4:Analyze the domain of dependence and region of influence for Hyperbolic PDES use of characteristic equations.	✓	✓										✓	✓	✓
CO5:Apply Energy method to find unique solution for hyperbolic PDEs.	✓	✓										✓	✓	✓
CO6:Find solution of Elliptic equation using separation variable method along with Fourier series method.	✓	✓										✓		✓

Table 121: Mapping between COs of MTH3005 and (POs & PSOs)

MTH3005:INTRODUCTION TO DIFFERENTIAL EQUATIONS														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1:Combine principles of differential calculus to formulate and solve models of exponential growth and decay, Newton's law of heating and cooling. Apply the method of Wronskians and method of undetermined coefficients to solve the higher order non homogeneous linear differential equations.	✓	✓												
CO2:Calculate the approximate solution and compare with exact solution of IVPs using Euler Improved Euler and Runge-Kutta method.	✓	✓												
CO3:Apply the method of linear algebra specifically eigen values and eigen vectors to solve linear system of differential equations.	✓	✓												
CO4:Compute the Laplace transform and use to solve the initial value problems.	✓	✓												
CO5:Solve linear differential equations with variable coefficients using power series method.	✓	✓												
CO6:Apply the concept of Fourier series to obtain the solution of Wave equation, Heat equation and Laplace equation. Develop the Eigen function expansions of Sturm-Liouville problems and analyze the application of Eigen function series to boundary value problems.	✓	✓												

### 2.2.7 Physics

The following PSOs are specified by the departmental board of studies.

- PSO1. Understand fundamental concepts & principles in different areas of electricity and magnetism such as Coulomb & Gauss's law, Biot-Savart's law, Ampere's law, design of ammeter, voltmeter, ohm meter and potentiometer out of a Galvanometer and to analyze circuits with multiple resistors, and capacitors, charge oscillation in LC and LCR circuits, Maxwell's equation and propagation of EM waves.
- PSO2. Apply the concepts & principles of electricity and magnetism to analyze & solve complex physical problems in different areas of science and technology.
- PSO3. Conduct experiments to realize concepts learned in different areas of electricity and magnetism related to RC circuits, LRC circuits, determination of magnetic field for Helmholtz coil, meter bridge experiment, B-H curve and determination electric power in series, parallel and mixed connection.

Table 122: Course Outcome of PHY2001

PHY2001:UNIVERSITY PHYSICS: ELECTRICITY AND MAGNETISM	
Course Outcome	Students will be able to
CO1	Acquire knowledge and comprehend Coulomb's law. Electric field, Gauss's law, Electric Force & potential, Electromagnetic waves, active components of dc and ac circuits.
CO2	Acquire knowledge and comprehend Biot-Savart law & Ampere's law, Magnetic force on current & moving charges.
CO3	Acquire knowledge and comprehend Kirchhoff's Rules, Faradays' law, Displacement current, Maxwell's equations
CO4	Apply concept laws of electricity & magnetism to Electromagnetic waves,
CO5	Apply theoretical concepts and laws of electricity & magnetism mentioned in CO1, CO2, CO3 and CO4 to solve problems in electricity & magnetism including analysis of dc and ac circuits
CO6	Apply the theoretical concepts to conduct the experiments, graphically analyze & interpret the observed data

Table 123: Mapping between COs of PHY2001 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓	✓											✓	✓	
CO2	✓	✓											✓	✓	
CO3	✓	✓											✓	✓	
CO4	✓	✓											✓	✓	
CO5	✓	✓											✓	✓	
CO6			✓												✓

Table 124: Course Outcome of PHY1001

PHY1001:UNIVERSITY PHYSICS: MECHANICS	
Course Outcome	Students will be able to
CO1	Acquire knowledge of vectors, kinematics, Newton's laws of motion and apply the knowledge to solve problems using free body diagrams in statics and dynamics.
CO2	Understand work-energy theorem, conservative forces, principle of rotation of rigid bodies and apply the knowledge to solve problems related to friction, elastic potential energy, gravitational potential energy, centre of mass, moment of inertia and static & dynamics of rigid bodies.
CO3	Acquire knowledge of elastic behavior, plasticity and fracture point of materials. Understand equation of continuity and Bernoulli's equation to solve problems in fluid dynamics related venturimeter and speed of efflux.
CO4	Acquire knowledge of Newton's law of gravitations & Kepler's laws of planetary motion and apply the knowledge to understand weightlessness, black holes and motion of satellites.
CO5	Apply the knowledge of periodic and simple harmonic motion to understand wave motion, standing wave formation and normal modes of vibration of waves on string.
CO6	Apply theoretical concepts in mechanics taught in the class to conduct experiments; graphically analyze and interpret the observed data.

Table 125: Mapping between COs of PHY1001 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓	✓										✓	✓		
CO2	✓	✓										✓	✓		
CO3	✓	✓										✓	✓		
CO4	✓	✓										✓	✓		
CO5	✓	✓										✓	✓		
CO6			✓											✓	

Table 126: Course Outcome of PHY1002

PHY1002:INTRODUCTION TO MECHANICS USING MATLAB 1	
Course Outcome	Students will be able to
CO1	Know the concept of vector and its operation along with the motion in one and several dimensions. Kinematical equations are solved using matlab
CO2	Understand the basic concept of Newton's Laws of motion and apply the laws to the realistic problems to find the solution.
CO3	Analyse the forces in everyday life like gravity force, electrostatic force, friction, and viscosity. The solution for the equations of motion and the distance travelled by the body are found through matlab.
CO4	Interpret the conservation of momentum to determine the equilibrium of a system. The velocity or mass of the component of the system are determined in equilibrium condition.
CO5	Determine the work done by the forces applied on a static body.
CO6	Analyse the energy concept and its conservation, and solve open ended problems through matlab.

Table 127: Mapping between COs of PHY1002 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓		✓		✓									✓	
CO2	✓		✓		✓									✓	
CO3	✓		✓		✓									✓	
CO4	✓		✓		✓									✓	✓
CO5	✓		✓		✓									✓	
CO6			✓											✓	✓

Table 128: Course Outcome of PHY3009

PHY3009:UNIVERSITY PHYSICS: SEMICONDUCTOR PHYSICS	
Course Outcome	Students will be able to
CO1	Know the atomic structure of a solid to understand the movement of electrons in the solid, bonding forces between atoms, creation of holes, and formation of energy bands in the solid.
CO2	Applies concepts of definite integrals involving exponential functions of electron-hole energy as well as gamma functions and Fermi-Dirac probability distribution function to determine the electron-hole concentrations in the conduction and valance bands of a semiconductor.
CO3	Analyze the electron mobility effect, ambipolar transport process of electrons and holes in semiconductors.
CO4	Realize the physics of the PN junction to design diode and transistors and evaluate the device characteristics.
CO5	Observe the metal semiconductor junction and their current-voltage characteristics, basic geometry, modes of operation as well as construction of transistors and the surface physics associated with MOS devices.
CO6	Study the design of semiconductor devices such as LED, Photo Diode, Solar Cell, Sensors and develop the ability for their fabrication.

Table 129: Mapping between COs of PHY3009 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓												✓		
CO2	✓												✓		
CO3	✓												✓	✓	
CO4		✓												✓	
CO5		✓											✓	✓	✓
CO6		✓													✓

### 2.2.8 Humanities and Social Sciences

The following PSOs are specified by the departmental board of studies.

- PSO1. Apply the knowledge of mathematics, science, economic fundamentals and understanding the economic problems for the solution of different problems related to demand, supply, tax and cost.

PSO2. Understand the impact of the professional solutions in societal and environmental contexts relating to externality, equitable distribution of resources and need for sustainable development.

PSO3. Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change through different basic economic principles and elasticity of demand and supply.

Table 130: Course Outcome of HSS1021

HSS1021:PRINCIPLES OF MICROECONOMICS	
Course Outcome	Students will be able to
CO1	Understand various economic concepts, principles and models, and utilize these in rational economic decision making pertaining to an individual and economy as a whole.
CO2	Understand the twin forces of market (both product and factor), i.e., demand and supply, in order to determine the equilibrium price and quantity and to demonstrate the effect of various factors affecting demand and supply on market equilibrium.
CO3	Understand and estimate elasticity of demand and supply as responsiveness to changes in various variables affecting demand and supply, and demonstrate their effect in decision making process of consumers, producers and government
CO4	Study the effect of government policies relating to price ceiling, price floor, tax, and international trade on market outcome and market efficiency.
CO5	Understand the concepts of public goods and common resources, negative and positive externality and the role of government to promote sustainable environment.
CO6	Understand the concept of cost and its use in production function.

Table 131: Mapping between COs of HSS1021 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓						✓					✓	✓	✓	✓
CO2	✓						✓						✓	✓	✓
CO3												✓			
CO4	✓												✓		
CO5							✓							✓	
CO6	✓												✓		

Table 132: Course Outcome of GED1001

GED1001:CRITICAL THINKING AND COMMUNICATION	
Course Outcome	Students will be able to
CO1	Use critical thinking and communication as learning and thinking tool.
CO2	Identify the different perspectives of argument and present arguments by using critical analysis and understanding of fallacies.
CO3	Identify the impact of culture and ethics on argument.
CO4	Construct logical arguments using correct evidence, reasoning, formal logic, effective language, audience analysis, strategies, techniques and principles.
CO5	Understand the Process of human communication, the problems of barriers and filters and how to overcome them.
CO6	Understand the public speaking process by researching, identifying types of speech and delivery methods, understanding the listening process, and knowing how to critique speech.

Table 133: Mapping between COs of GED1001 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1												✓			
CO2										✓					
CO3								✓							
CO4										✓					
CO5										✓					
CO6										✓					



Table 134: Course Outcome of HSS2021

HSS2021:PRINCIPLES OF MACROECONOMICS	
Course Outcome	Students will be able to
CO1	Understand the concept of absolute and comparative cost advantage to study the pattern and terms of trade between / among different countries of the world to gain.
CO2	Describe circular flow of income with withdrawals and injections and applying this concept in calculating income of the nation and rate of inflation.
CO3	Apply consumer price index (CPI) to measure cost of living of the consumers, rate of inflation and comparing dollar figure from different times.
CO4	Understand the relationship between saving and investment in national income accounting and apply these concepts to determine equilibrium interest rate in loanable funds market.
CO5	Understand the concept and determinants of productivity to study the link between productivity and economic policies that a nation pursues to achieve long-run sustainable economic growth.
CO6	Understand the concept of actual unemployment rate and natural rate of unemployment to study why actual labor markets depart from the ideal of full employment.

Table 135: Mapping between COs of HSS2021 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓									✓					
CO2	✓						✓			✓					
CO3	✓														
CO4	✓						✓			✓					
CO5							✓			✓					
CO6	✓									✓					

Table 136: Course Outcome of GED1003

GED1003:THE TECHNICAL WRITING PROCESS	
Course Outcome	Students will be able to
CO1	Understand various economic concepts, principles and models, and utilize these in rational economic decision making pertaining to an individual and economy as a whole.
CO2	Understand the twin forces of market (both product and factor), i.e., demand and supply, in order to determine the equilibrium price and quantity and to demonstrate the effect of various factors affecting demand and supply on market equilibrium.
CO3	Understand and estimate elasticity of demand and supply as responsiveness to changes in various variables affecting demand and supply, and demonstrate their effect in decision making process of consumers, producers and government.
CO4	Study the effect of government policies relating to price ceiling, price floor, tax, and international trade on market outcome and market efficiency.
CO5	Understand the concepts of public goods and common resources, negative and positive externality and the role of government to promote sustainable environment.
CO6	Understand the concept of cost and its use in production function.

Table 137: Mapping between COs of GED1003 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓						✓					✓	✓	✓	✓
CO2	✓						✓						✓	✓	✓
CO3												✓			
CO4	✓												✓		
CO5							✓							✓	
CO6	✓												✓		

Table 138: Course Outcome of GED1002

GED1002:LEGAL AND ETHICAL ASPECTS OF ENGINEERING	
Course Outcome	Students will be able to
CO1	Distinguish between professional ethics, personal ethics and common morality. Classify various types of professional engineering ethics. Describe Internal national Engineering Professionalism by addressing boundary crosses problems.
CO2	Analyze the result of being responsible. Describe noteworthy features of group think/critical thinking.
CO3	Express disagreement. Classify two general moral perspectives that can be helpful in framing moral problems in engineer are the utilitarian ideal of prompting the greatest good and that of respect for persons.
CO4	Analyze ethical problems by identifying the relevant facts, relevant ethical consideration. By comprising, it with design problems in engineering By line drawing utilitarian and respect for persons approaches.
CO5	Express the social and value dimensions of technology by developing a critical attitude toward technology and expressing that in engineering design & experimentation. Predict ‘capabilities’ approach attempts to make calculation sophisticated by developing adequate way of measuring the harms and benefits from disasters to overall wellbeing. Explain the different approach, predict and protect themselves from under liability for risks, explain the standard of proof in tort law.
CO6	Explain trust and reliability by focusing on issues related to trust worthiness in engineer; honesty, confidentiality, intellectual property, expert witnessing, public communication and conflict of interest. Classify forms of dishonesty.

Table 139: Mapping between COs of GED1002 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	✓	✓				✓	✓		✓	✓					
CO2	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓			
CO3	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓			
CO4	✓		✓		✓	✓		✓	✓		✓	✓			
CO5						✓		✓							
CO6	✓	✓				✓	✓		✓	✓		✓			

## 3 Hotel Management Program

### 3.1 Program Outcomes for BHMCT Program

There are twelve program outcomes for the Bachelor of Hotel Management & Catering Technology (BHMCT) program

- PO1. **Basic Knowledge:** Acquire, understand, and utilize the basic, intermediate, and advanced concepts in the core areas of Professional Cookery, F&B Service, Front office, and Housekeeping services.
- PO2. **Problem Analysis:** Ability to understand, analyze, and solve the existing & emerging issues pertaining in the hotel Industry by establishing a close link between theoretical knowledge and practical operations.
- PO3. **Analytical Skill:** Become well versed with the strategic management issues involved in the operations of hotels and should be able to apply the concepts, tools, & techniques to generate practical solutions for the industry.
- PO4. **Environment and Sustainability:** Understand and utilize the current and emerging concepts in the ever changing business environment in order to sharpen their leadership and entrepreneurial skills.
- PO5. **Business Knowledge:** Appreciate and demonstrate the knowledge and skills desired at the local, national, and international business management activities and to produce creative business solutions to attract, maintain and grow the customer base.
- PO6. **Communication Skills:** Accumulate, synthesize, and disseminate the key information through the effective use of various professional communication channels and technologies in written, verbal, and visual modes.
- PO7. **Quantitative Skills:** Collect, analyze, understand, and effectively use the data and information regarding the market through various statistical, forecasting, and estimation techniques in order to arrive upon various business decisions.
- PO8. **Critical Thinking Skills:** Appreciate, evaluate, and demonstrate proficiency in critical thinking and apply the same in solving the cultural, social, professional, and legal issues and to make effective business decisions in both structured and unstructured situations.
- PO9. **Technology:** Realize and utilize the current and emerging technologies in order to operate varieties of machines, equipment, and applications towards enhancing their productivity and efficiencies.
- PO10. **Ethics:** To be able to interpret, demonstrate, and utilize professionalism and ethical practices in order to manage both domestic and international business issues.

- PO11. **Multicultural and Diversity:** To develop awareness, understandings, respect, and responsiveness towards the multi-cultural work environment comprising of people belonging to contrasting regions, age, genders, caste, colors, religions, & political affinities that impact business operations at a global level.
- PO12. **Demonstrate Learning:** Acquire and demonstrate the traits of curiosity, self-motivation, reflectiveness, perseverance, positiveness, tireless attitude, devotion, honesty, integrity, hard work, and flexibility and become self-regulated lifelong learners.

### **3.2 Program Outcomes for BBA (Hons.) in H&CA Program**

There are twelve program outcomes for BBA (Hons.) in Hospitality & Culinary Arts Program

- PO1. **Basic Knowledge:** Acquire, synthesize, and demonstrate advanced levels of knowledge and skills towards the classical, contemporary, & emerging cooking techniques as well as show competencies towards handling the operations of F&B Service, Front office, and Housekeeping services in commercial hospitality avenues.
- PO2. **Problem Analysis:** Establish synchronization between the theoretical knowledge and practical operations for understanding, analysing, and solving the existing & emerging issues pertaining in the hospitality management domain.
- PO3. **Analytical Skill:** Become well versed with the operations, effects, and relevance of the notion of strategic management and demonstrate proficiencies towards suitable use of various concepts, tools, models, & techniques of it to generate practical solutions for the businesses.
- PO4. **Environment and Sustainability:** Assess the ever changing business scenarios and exhibit proficiencies towards handling the various multi-level business operations through use of appropriate leadership, interpersonal, customer service, and entrepreneurial competencies.
- PO5. **Business Knowledge:** Gain thorough knowledge, key understandings, and skills in their chosen area of expertise and adequately use those competencies to manage the business operations at the local, national, and international levels.
- PO6. **Communication Skills:** Develop awareness, knowledge, deep appreciations towards intrapersonal and interpersonal communications and show desired levels of proficiencies towards accumulating, synthesizing, and disseminating the key business data & information through the effective use of various written, verbal, and visual modes.

- PO7. **Quantitative Skills:** Apprehend and exhibit profound appreciations towards the numerical, statistical, forecasting, and estimation techniques for collection, analysis, and use of quantitative business data towards making vital operational decisions in business operations.
- PO8. **Critical Thinking Skills:** To familiarize themselves with the principles and practices of objective, evidence, information, and logic based approach for effective business decisions making towards the exiting & emerging operational, social, professional, & legal issues in business operations.
- PO9. **Technology:** Appreciate and exhibit the necessary skills to utilize all types of current and emerging technologies in order to operate different types of machines, tools, equipment, and computer based applications for enhancing the efficacies and efficiencies of work processes.
- PO10. **Ethics:** Proficiently interpret and utilize the classical, contemporary, & emerging frameworks to analyze and resolve the ethical, moral, and behavioral issues arising at personal, managerial, and organizational levels during the business operations.
- PO11. **Multicultural and Diversity:** To develop awareness, understandings, respect, and demonstrate responsive behaviors while working and managing multi-cultural work environment comprising of people from divergent regions, religions, age groups, genders, castes, colors, social and political affinities.
- PO12. **Demonstrate Learning:** Understand the importance and demonstrate the traits like creativity, curiosity, problem solving, adaptability, self-motivation, perseverance, tireless attitude, devotion, honesty, integrity, hard work, and flexibility etc. to become lifelong learners.

### **3.3 Program Outcomes for MBA in HM Program**

There are twelve program outcomes for Master of Business Administration in Hospitality Management Program

- PO1. **Basic Knowledge:** Develop sound understandings of the theoretical concepts and achieve operational efficiencies through practical approaches in the core areas of hospitality management at basic, intermediate, and advanced levels.
- PO2. **Problem Analysis:** Accumulate, categorize, understand, analyse, and solve complex issues pertaining in the existing and emerging areas in the hospitality management domain.
- PO3. **Analytical Skill:** Develop capacities to effectively initiate, lead, and manage global hospitality businesses.

- PO4. **Environment and Sustainability:** Evolve as a competent professional well acquainted with the strategic management issues involved with the operational aspects of global hospitality businesses and should be able to apply the concepts, models, and tools in order to generate viable solutions.
- PO5. **Business Knowledge:** Gain and demonstrate the desired levels of intellect and attitudes towards understanding the business processes at the local, national, and international context in order to gain independent & reflective learning as well as achieve optimum level of customer satisfaction.
- PO6. **Communication Skills:** Acquire and demonstrate the appropriate communication skills across business various settings, contexts, and audience in all forms of written, verbal, and visual modes in order to work in a collaborative manner.
- PO7. **Quantitative Skills:** Understand the various mathematical & statistical techniques in business decision making and demonstrate abilities to make business decisions through reading, interpreting, and using relevant data and information.
- PO8. **Critical Thinking Skills:** Articulate and formulate innovative ideas through critical thinking in order to understand the actions, reactions, and their consequences as well as get involved in Articulate and formulate identifying & explaining the issue, employing evidences, analysing contexts, describing the perspectives, formulating the solutions and drawing conclusions.
- PO9. **Technology:** Practice dynamic business operations through the suitable use of both existing and emerging technologies, applications, equipment, and machineries in order to configure, administer, comprehend, and resolve various issues and offer creative solutions.
- PO10. **Ethics:** Acquire, demonstrate, and bolster the highest standards of ethical behaviour, morality, and integrity while dealing with and resolving various issues arising in businesses operations and inducting ethical practices into own personal, professional, and managerial decision making frameworks.
- PO11. **Multicultural and Diversity:** Apprehend and demonstrate skills to explore, adapt, tolerate, and respect the concepts of diversities, tolerance, and pluralism while working in a diverse business environment comprising of people belonging to contrasting genders, age, religions, political affinities, caste, colour, tastes and preferences.
- PO12. **Demonstrate Learning:** Acquire and demonstrate essential skill sets of self-direction, self-regulation, self-motivation, reflectiveness, mannerism, and metacognitive approach towards continuous growth and improved performances in their personal and professional fronts and become a lifelong scholar.

### 3.4 Mapping of CO Vs POs

#### 3.4.1 Bachelor of Hotel Management & Catering Technology

Table 140: Mapping between COs of HM1BHTSI and POs

HM1BHTSI:Basics of Hospitality & Tourism Sectors - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand & exhibit necessary skills towards describing the basics of hotel industry, its origins, growth over the years, current status& trends, future prospects & emerging issues as well as the detailed classifications	✓	✓		✓								
CO2:Understand and demonstrate appropriate skills towards defining phenomena of tourism, global trends, typology, existing & emerging concepts.			✓	✓	✓							
CO3:Appreciate themselves with various tourism organizations that forms the core of the global tourism industry					✓			✓	✓	✓		
CO4:Acknowledge the concepts of various hospitality & tourism sector products, their nature, classifications, as well as the display competencies towards the process of designing and showcasing them to global audience.	✓	✓	✓									



Table 141: Mapping between COs of HM1GGSI and POs

HM1GGSI:Gateway to Gastronomy Studies - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand & explain the basics of professional cookery, aims, objectives, and evolution over the years	✓			✓	✓				✓			✓
CO2:Apprehend and illustrate the desired skills towards for explaining & preparing the detailed kitchen organizational structures, different operational, executive & managerial positions, and their work roles & responsibilities	✓				✓			✓			✓	
CO3:Appreciate & familiarize themselves with the kitchen layouts, design, proper usages of various tools, equipment, safety measures to be ensured	✓	✓	✓	✓				✓				
CO4:Understand and should be able to recognize the various commodities commonly used in the kitchen, their functions, storage techniques, proper usages, techniques of preparations, classifications, and cookery	✓	✓			✓							
CO5:Appreciate and apply different methods used in professional cookery	✓	✓	✓									

Table 142: Mapping between COs of HM1GGSII and POs

HM1GGSII: Gateway to Gastronomy Studies - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1: Gain professional knowledge towards bulk food preparations and demonstrate adequate skills towards preparation of basic items in cookery.	✓	✓		✓	✓							✓
CO2: Acknowledge & recognize the varieties of tools & equipment, raw materials & ingredients used in the used in commercial kitchens operations and demonstrate their suitable usages	✓	✓		✓								✓
CO3: Appreciate the basic principles of bakery & confectionary along with exhibition of basic skills towards preparation of basic bakery products.	✓	✓		✓	✓							✓

Table 143: Mapping between COs of HM1FSOBI and POs

HM1FSOBI:Food Service Operations for Beginners - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the role of catering establishments in the travel & tourism industry contributing towards the national economy along with demonstrating their skills towards explaining the detailed classification of them	✓	✓	✓	✓	✓							✓
CO2:Appreciate the detailed organizational structure of food & beverage service department along with exhibiting skills towards explaining the characteristics of various staffs involved, and their relations with other departments of the hotels as well as job descriptions	✓	✓	✓									
CO3:Gain knowledge towards the varieties of services commonly used in hotels and their characteristics while showcasing appropriate skills towards handling them	✓		✓									
CO4:Apprehend, recognize and learn to use the various types of tools & equipment commonly used in restaurant operations along with their classifications, correct usages, and care to be taken while handling etc.	✓	✓	✓									

Table 144: Mapping between COs of HM1FSOBII and POs

HM1FSOBII:Food Service Operations for Beginners - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate the basic skills and techniques required for food & beverage service operations.	✓	✓	✓	✓	✓				✓			✓
CO2:Gain technical knowledge and detailed comprehensions towards identification, classifications, and proper usage of various tools & equipment used in restaurants.	✓	✓	✓		✓					✓		
CO3:Acknowledge and demonstrate skills towards setting up various types of table layouts and covers as per the occasion and demand	✓	✓		✓	✓							
CO4:Appreciate and demonstrate skills towards guest receiving procedures and order taking along with serving.	✓	✓	✓	✓	✓							

Table 145: Mapping between COs of HM1FFOOI and POs

HM1FFOOI:Foundations of Front Office Operations - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the evolution & growth of hotel industry along with realization of interrelationships between travel, tourism and hospitality sectors.	✓	✓	✓	✓								
CO2:Appreciate and exhibit skills towards the detailed classification format for hotel industry.	✓	✓	✓									
CO3:Gain knowledge & demonstrate skills towards the organizational structures in varieties of hotels along with special focus on hierarchy of the front office department, coordination with other departments along with job descriptions and specifications of key staffs.	✓	✓	✓	✓	✓	✓					✓	
CO4:Understand and identify the accommodation sector as a product and learn the various techniques towards projecting, promoting and selling them as commodities.	✓	✓	✓	✓	✓			✓	✓		✓	
CO5:Understand the details of guest cycle along with exhibiting appropriate skills towards the standard operating procedures to serve the customers.	✓	✓	✓	✓								

Table 146: Mapping between COs of HM1FFOOII and POs

HM1FFOOII:Foundations of Front Office Operations - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate the basicskills, mannerism, and techniques required for front office operations.	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO2:Gain technical knowledge and demonstrate skills towards identifying and handling different tools, equipment and technologies used in the front office departments.	✓	✓	✓	✓	✓			✓	✓			
CO3:Acknowledge, identify, and use the essential forms and formats used in front office operations.	✓	✓	✓	✓	✓				✓		✓	
CO4:Appreciate and exhibiting skills towards the communication and groom- ing standards desired for the front office operations.	✓	✓	✓	✓	✓	✓					✓	

Table 147: Mapping between COs of HM1IHDI and POs

HM1IHDI:Introduction to Housekeeping Division - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the role and importance of housekeeping department in various industry sectors like hotels, airlines, hospitals, corporate officers etc. and exhibit appropriate skills towards handling them.	✓	✓	✓	✓	✓					✓	✓	
CO2:Appreciate and demonstrate the skills towards defining the details of housekeeping department along with its organizational structure along with the job descriptions and specifications of key personnel.	✓	✓	✓	✓	✓		✓				✓	
CO3:Gain knowledge the housekeeping control desk along with understanding the various files and registers and exhibit skill towards operating them.	✓	✓	✓	✓	✓							
CO4:Understand and identify the accommodation sector from housekeeping point of view along with types and layout of various areas covered under its operations.	✓	✓	✓	✓	✓							
CO5:Understand, identify, and demonstrate the proper use the various house-keeping tools, equipment, and cleaning agents and know their care and maintenance procedures.	✓	✓	✓	✓	✓				✓	✓	✓	

Table 148: Mapping between COs of HM1IHDII and POs

HM1IHDII:Introduction to Housekeeping Division - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate the basic skills, and techniques required for housekeeping operations.	✓	✓	✓	✓	✓	✓						
CO2:Gain technical knowledge and exhibit skills towards identifying and handling different cleaning tools, equipment and cleaning agents properly.	✓	✓	✓		✓				✓			
CO3:Acknowledge and identify the essential supplies & amenities provided in the guest rooms.	✓				✓							
CO4:Appreciate and demonstrate skills towards mannerism and operational procedures required in housekeeping department.	✓	✓	✓	✓		✓		✓			✓	



Table 149: Mapping between COs of HM1THSI and POs

HM1THSI:Technology in Hospitality Sector - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the importance of information and appreciate the role of data in running the modern day businesses.				✓	✓	✓	✓		✓			
CO2:Understand, identify, and use various types of technological gadgets commonly used in hotel industry.		✓	✓	✓	✓				✓			
CO3:Gain knowledge towards the computers, their operating systems, and functioning and explain their functional aspects.		✓	✓						✓			
CO4:Understand and demonstrate proper skills to use various commonly used applications for operating modern day businesses.	✓	✓	✓	✓	✓				✓			
CO5:Identify, understand, and demonstrate the proper use of the internet along with understanding their functions, ethical usages and usefulness in hotel industry.	✓	✓	✓	✓	✓	✓			✓			

Table 150: Mapping between COs of HM1THSII and POs

HM1THSII:Technology in Hospitality Sector - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and exhibit skills towards identifying and operating various types of computers and familiarize with the modern day software applications and technologies.	✓	✓	✓	✓	✓				✓			
CO2:Gain technical knowledge and demonstrate skills towards the use various computer based applications.	✓	✓	✓	✓	✓				✓			
CO3:Acknowledge and demonstrate skills towards web browsing as well as ethical use of web based information resources.	✓	✓	✓	✓	✓				✓			
CO4:Appreciate and demonstrate skills in using the technologies for creation and operation of their own virtual place on web like food blogs, face book pages related to hospitality operations.	✓	✓	✓	✓	✓	✓	✓	✓	✓			

Table 151: Mapping between COs of HM2CCPI and POs

HM2CCPI:Common Culinary Practices Theory - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the core components of professional cookery, i.e. Stocks, Sauce, Soups, Salads and demonstrate their skills towards using them in culinary operations.	✓	✓	✓	✓	✓				✓		✓	
CO2:Apprehend the details of bakery & confectionary section in a commercial kitchen and become familiar with various tools, equipment, and ingredients used there.	✓	✓	✓	✓	✓				✓			
CO3:Gain knowledge and familiarize themselves with the various types of bakery products like pastry dough, cakes, and bread.	✓	✓	✓	✓	✓				✓		✓	
CO4:Have thorough knowledge regarding the fish, meat, pork, poultry & games products and exhibit skills towards their cookery processes.	✓		✓		✓						✓	
CO5:To appreciate and demonstrate skills towards planning and implementing menu for cooking operations as well as familiarize themselves with the various culinary terms used in the commercial operations.	✓	✓	✓	✓	✓				✓		✓	

Table 152: Mapping between COs of HM2CCPII and POs

HM2CCPII:Common Culinary Practices Theory - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate their skills in preparing the basics items of professional cookery like stocks, sauces, soups and salads etc.	✓	✓	✓	✓	✓				✓		✓	
CO2:Gain professional knowledge and exhibit skills towards the preparation of international menu comprising of three to four courses of cuisines.	✓	✓	✓	✓	✓				✓		✓	
CO3:Acknowledge, identify, classify, and demonstrate skills regarding preparation of varieties of cuts and folds of vegetables, fish, meat items etc.	✓	✓	✓	✓	✓				✓		✓	
CO4:Appreciate and demonstrate the skills towards preparation of various bakery products like bread, pastry, cakes, hot/cold and Indian desserts etc.	✓	✓	✓	✓	✓				✓		✓	

Table 153: Mapping between COs of HM2RSMI and POs

HM2RSMI:Restaurant Service Management - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the core components of professional menu planning process along with its key considerations and constraints and exhibit skill towards managing their functions.	✓	✓	✓	✓	✓							
CO2:Apprehend the details of various commonly used F&B service formats like breakfast, brunch, lunch, dinner, afternoon tea, high tea, supper, snacks etc. and demonstrate the required skills for serving them.	✓	✓	✓	✓								
CO3:Familiarize themselves with the layout of F&B service areas and understand the types of F&B service required at various places.	✓	✓	✓	✓	✓	✓			✓		✓	
CO4:Have thorough knowledge and demonstrate appropriate skills towards controlling mechanism used in F&B service operations by realizing the details of F&B control cycle, cash handing mechanisms, KOT & BOT procedures, as well as computerized F&B accounting.	✓	✓	✓	✓		✓			✓		✓	

Table 154: Mapping between COs of HM2RSMII and POs

HM2RSMII:Restaurant Service Management - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate their skills in preparing 4, 5 and 6 courses Indian and International menus.	✓	✓	✓	✓	✓	✓		✓	✓		✓	
CO2:Gain professional knowledge and demonstrate skills towards order taking and processing techniques.	✓	✓	✓	✓	✓	✓					✓	
CO3:Acknowledge and demonstrate skills regarding serving different types of foods and beverages and the process of clearing them.	✓	✓	✓	✓	✓	✓					✓	
CO4:Appreciate and demonstrate the skills towards crumblng down procedures and presentation of bills to the customers.	✓	✓	✓	✓	✓	✓					✓	

Table 155: Mapping between COs of HM2OFODI and POs

HM2OFODI:Operations in Front Office Division - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the core components of front office department like the basic layouts as well as varieties of tools, equipment & applications used and show proficiencies in using them.	✓	✓	✓	✓	✓				✓			
CO2:Apprehend the details of reservation process, its system, sources and modes and exhibit skills towards practically handle them.	✓	✓	✓	✓	✓				✓			
CO3:Familiarize themselves with the detailed procedures regarding handling the guest registration and departure processes.	✓	✓	✓	✓	✓				✓			
CO4:Have thorough knowledge and demonstrate skills towards the front of- fice cash handling mechanisms, along with handling the foreign currencies.	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	

Table 156: Mapping between COs of HM2OFODII and POs

HM2OFODII:Operations in Front Office Division - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and exhibit their skills in handing guest enquiries and converting them into sales along with the proper usage of various front office tools, equipment, and application including answering over phones and emails.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Gain professional knowledge and show skills towards receiving, registration and departure procedures employed in international business properties.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:Acknowledge and demonstrate skills regarding the detailed documentation aspects of a guest folios.	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓
CO4:Appreciate and illustrate skills towards handling situations in case of emergencies like death, fire, natural and manmade disasters etc.	✓	✓	✓	✓	✓	✓		✓	✓	✓		



Table 157: Mapping between COs of HM2HKOI and POs

HM2HKOI:Housekeeping Operations - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the core components of housekeeping operations and exhibit skills towards like proper care and cleaning of guest rooms and its amenities.	✓	✓	✓	✓	✓	✓			✓	✓	✓	
CO2:Apprehend and illustrate skills regarding the care and maintenance of the public areas on a regular basis.	✓	✓	✓	✓	✓							
CO3:Familiarize themselves with the detailed procedures regarding floor operations along with details of handling keys, as well as lost & found procedures.	✓	✓	✓	✓	✓	✓		✓		✓		
CO4:Have thorough knowledge and demonstrate the required skills regarding the care and maintenance of different types of surfaces like metals, glass, wood, rexine, plastic, ceramics etc.	✓	✓	✓	✓	✓							

Table 158: Mapping between COs of HM2HKOII and POs

HM2HKOII:Housekeeping Operations - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate their skills in basic care and cleaning procedures of the guest rooms along with bed making techniques, towel folding and taking care of the supplies, linen, and amenities there.	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO2:Gain professional knowledge and exhibit skills towards care and cleaning procedures at the public areas of a hotel property along with proper skills to proficiently use the maid's trolley.	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO3:Acknowledge and illustrate skills regarding the handling of keys along with familiarize with the lost and found procedures.	✓	✓	✓	✓	✓	✓				✓		
CO4:Appreciate and demonstrate the skills towards care and cleaning of different surfaces like wood, metal, plastics, ceramics, rexine, granite etc.	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	

Table 159: Mapping between COs of HM2CSHSI and POs

HM2CSHSI:Communication Skills for Hospitality Sector - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the importance and exhibit proper communication skills in managing the modern day businesses.		✓	✓	✓	✓	✓	✓	✓	✓		✓	
CO2:Apprehend and make use of correct vocabularies and avoid commonly made errors in communication processes.		✓	✓	✓	✓	✓	✓		✓		✓	
CO3:Familiarize and practice both verbal and non-verbal communication modes along with correct use of words, interviews, debating skills, group discussions and telephonic conversations.		✓	✓	✓	✓	✓		✓	✓			
CO4:Have thorough knowledge and demonstrate skills towards the official secretarial writing skills like note making, Precis writing, letter and memo drafting, preparation of curriculum vitae etc.		✓	✓	✓	✓	✓		✓	✓	✓	✓	

Table 160: Mapping between COs of HM2CSHSII and POs

HM2CSHSII:Communication Skills for Hospitality Sector - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate their skills in managing and improving corporate communication processes.		✓	✓	✓	✓	✓		✓	✓		✓	
CO2:Gain adequate knowledge and demonstrate professional skills in presentations, letter / memo / report writing procedures, and preparation of curriculum vitae.		✓	✓	✓	✓	✓		✓	✓		✓	
CO3:Acknowledge the importance and demonstrate skills regarding the correct uses of words and accents while communicating.	✓	✓	✓	✓	✓	✓		✓	✓		✓	
CO4:Apprehend the importance of both inters and intra departmental communication and exhibit appropriate uses of various communication modes.	✓	✓	✓	✓	✓	✓		✓	✓		✓	

Table 161: Mapping between COs of HM2FNI and POs

HM2FNI:Food & Nutrition - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the importance of food and show affiliation towards the nutritional aspects of it for leading a healthier life along with the functions, benefits, groups, and products.		✓	✓	✓	✓			✓		✓	✓	
CO2:Apprehend and exhibit skills towards preparing various types of nutritional menu as per the occasions and demands.	✓	✓	✓	✓	✓			✓		✓	✓	
CO3:Familiarize about the vitamins along with their functions, sources, and discuss the results arising upon their deficiencies.		✓	✓	✓	✓					✓	✓	
CO4:Have thorough knowledge regarding the existing trends and emerging concepts in terms of nutrition in commercial catering businesses as well as disruptive and alternative ideas regarding contemporary menu and ingredients.	✓	✓	✓	✓	✓					✓		

Table 162: Mapping between COs of HM3QFPTI and POs

HM3QFPTI:Quantity Food Production Techniques – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the core concepts of quantity food production along with exhibit abilities towards identification of all tools and equipment used, installation, usages, care, and maintenance processes.	✓	✓	✓	✓	✓				✓		✓	
CO2:Apprehend the details of menu planning for various volume feeding operations and exhibit necessary skills towards their mechanisms.	✓	✓	✓	✓	✓				✓		✓	
CO3:Familiarize with the indenting procedures, along with details of portioning, modifications of recipes etc. for volume feeding activities.	✓	✓		✓	✓	✓					✓	
CO4:Have thorough knowledge regarding the industrial, institutional, and mobile catering operations.	✓		✓	✓	✓				✓			
CO5:To appreciate different regional Indian cuisine along with their history, heritage, geographical affinities, key ingredients, equipment and utensils used, and special delicacies and demonstrate their preparations.	✓	✓	✓	✓	✓				✓		✓	

Table 163: Mapping between COs of HM3QFPTII and POs

HM3QFPTII:Quantity Food Production Techniques – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate their skills in preparing the menu and indenting for quantity food production operations in industrial, institutional, and mobile catering activities.	✓	✓	✓	✓	✓				✓		✓	
CO2:Gain professional knowledge and prepare regional Indian cuisines from different regions like Kashmir, Goa, Kerala, Punjab, West Bengal, Gujarat, Odisha, Rajasthan, and Andhra Pradesh etc. in bulk quantities while appreciating their history, heritage, geographical affinities, cultural effects as well as special delicacies.	✓	✓	✓	✓	✓				✓		✓	
CO3:Appreciate and demonstrate the skills towards identifying, using, and taking proper care and maintenance of different tools, equipment and utensils involved in quantity food production operations.	✓	✓	✓	✓	✓				✓		✓	

Table 164: Mapping between COs of HM3WBBI and POs

HM3WBBI:Wine & brewed beverages - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and appreciate the core concepts regarding beverages along with their detailed classifications, origins, manufacturing processes, storage, brands and art of serving.	✓	✓	✓	✓	✓				✓			
CO2:Apprehend the details of beer, its key ingredients, manufacturing process, and demonstrate skills towards presenting their types, brands, storage and art of serving etc.	✓	✓		✓	✓				✓			
CO3:Familiarize with other brewed and fermented beverages like cider, perry, sake along with their manufacturing process, and demonstrate appropriate skills towards presenting their brands, storage techniques, and serving processes etc.	✓	✓		✓	✓				✓			
CO4:Have thorough knowledge and skills regarding the wines, their typology, manufacturing process, storage, brands and art of serving.	✓	✓		✓	✓				✓			



Table 165: Mapping between COs of HM3WBBII and POs

HM3WBBII:Wine & brewed beverages - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate their skills in indentifying, using, taking care of and maintenance of different kinds of glassware for different beverage types and occasions.	✓				✓				✓			
CO2:Gain professional knowledge and exhibit their skills in laying different types of covers and serving of various types of meals.	✓				✓				✓			
CO3:Appreciate and showcase the skills towards identifying, storing, serving, and taking proper care and maintenance of different types of alcoholic and non-alcoholic beverages as per the needs of the guests.	✓				✓				✓			
CO4:Apprehend the pairing of wines with food and demonstrate skills towards menu planning using them.	✓				✓				✓			

Table 166: Mapping between COs of HM3MGRI and POs

HM3MGRI:Management of Guest Relations - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the core operational concepts and exhibit the desired skills regarding the front office operations along with the responsibilities during the pre-arrival, guest encounter, and post checkout phases.	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
CO2:Apprehend the details of security functions performed by the front office department and demonstrate necessary skills in handling of guest baggage, key control operations, lost and found procedures, protection of cash and other valuables etc.					✓	✓		✓	✓		✓	
CO3:Familiarize with the bell desk operations check-in, check-out and luggage handling procedures.	✓	✓			✓	✓			✓		✓	
CO4:Have thorough knowledge and skills towards the lobby operations and guest relationship management activities.	✓	✓	✓	✓	✓	✓			✓		✓	

Table 167: Mapping between COs of HM3MGRII and POs

HM3MGRII:Management of Guest Relations - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate their skills in identifying and using different equipment and applications used in the front office department for serving the guests' needs.	✓	✓	✓		✓	✓			✓		✓	
CO2:Gain professional knowledge and exhibit their skills in performing various roles desired from the personnel working at the front office department.	✓	✓			✓	✓			✓		✓	
CO3:Appreciate and illustrate the skills towards handling different types of emergency situations and guest complaints.		✓			✓	✓			✓		✓	
CO4:Apprehend and demonstrate skills towards building, managing, and maintaining guest relation activities.	✓	✓	✓	✓	✓	✓			✓		✓	

Table 168: Mapping between COs of HM2LOHKI and POs

HM2LOHKI:Laundry Operations in Housekeeping - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the core operational concepts involved in the housekeeping department and exhibit adequate skills towards the functions of layout planning, components, storage facilities, par stock procedures, discard and linen management, uniform designing etc.	✓	✓	✓	✓	✓				✓		✓	
CO2:Apprehend the details and demonstrate skills towards the laundry operations like layout planning, handling of tools and equipment, staffing, processes, stages as well as stain removal mechanisms etc.	✓	✓			✓				✓			
CO3:Familiarize with the details of textiles including the origins, classifications, and characteristics.	✓				✓				✓			
CO4:Have thorough knowledge regarding the yarns and finishes used in hotel operations covered under the housekeeping domain.	✓				✓				✓			

Table 169: Mapping between COs of HM2LOHKII and POs

HM2LOHKII:Laundry Operations in Housekeeping - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate their skills in operating laundry operations in commercial hotels to the best of their abilities.	✓	✓	✓		✓				✓			
CO2:Gain professional knowledge and exhibit their skills in performing various activities of administration in housekeeping operations like maintenance and use of forms, formats, and registers, storage and stock taking activities.	✓	✓			✓				✓			
CO3:Appreciate and showcase the skills towards using various tools and equipment used in the housekeeping operations including that of laundry and sewing rooms.	✓	✓			✓				✓			
CO4:Apprehend and illustrate skills towards effective use of various cleaning agents towards stain removal from various surfaces and fabrics.	✓	✓	✓	✓	✓				✓			

Table 170: Mapping between COs of HM3AFHSI and POs

HM3AFHSI:Accounting & Finance for Hospitality Sector - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the accepted accounting principles, define them appropriately, and use them proficiently towards taking various business decisions etc.	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO2:Apprehend the concept of financial statements and show affinities towards preparation of various financial statements like balance sheet, income statement, cash flow statement, etc. which would help towards business decision making processes.	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO3:Familiarize and develop skills towards the inventory management techniques.	✓	✓	✓	✓	✓		✓	✓	✓			
CO4:Have thorough knowledge regarding the strategic decision making process from financial perspectives like financing, investment and dividend decisions, cost of capital, working capital, short term and long term sources of finance for hotels and restaurants etc.	✓	✓	✓	✓	✓	✓		✓	✓			

Table 171: Mapping between COs of HM3MCI and POs

HM3MCI:Management Concepts-Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the well established management concepts, principles, as well as their evolution scenarios over the years, and demonstrate adequate skills to use them ethically while taking business decisions.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Apprehend and exhibit skills towards managing the business environment by utilizing the managerial functions of planning, organizing, staffing, coordination, and controlling in effective and efficient manners.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:Familiarize and develop skills towards the management techniques in an ethical manner.					✓					✓		✓
CO4:Have thorough knowledge regarding the dynamics of global business environment and develop abilities towards identifying the strengths and weaknesses of the individual businesses as well as the opportunities and threats prevailing in markets.		✓	✓	✓	✓					✓	✓	

Table 172: Mapping between COs of HM4ICDI and POs

HM4ICDI:Indian Culinary Delights – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:To appreciate different regional Indian cuisine along with their history, heritage, geographical affinities, key ingredients, equipment and utensils used, along with the special delicacies.	✓	✓	✓	✓	✓		✓		✓		✓	
CO2:To understand the core concepts of community based cuisines in India like Hyderabadi, Avadhi, Parseem Malabari / Syrian, Christian, Bohri etc. along with their history, heritage, geographical affinities, key ingredients, equipment and utensils used, along with the special delicacies	✓	✓	✓	✓	✓		✓		✓		✓	
CO3:Apprehend the details of menu planning and indenting for bulk cooking operations.	✓	✓	✓	✓	✓		✓		✓		✓	
CO4:Familiarize themselves with the concept of the tandoor, its origins, evolutions, constructions and components, tools required to operate, specialty dishes produced in tandoor etc.	✓	✓		✓	✓				✓			
CO5:To appreciate different Indian bread, snacks items and sweets.	✓	✓	✓	✓	✓		✓		✓		✓	



Table 173: Mapping between COs of HM4ICDII and POs

HM4ICDII:Indian Culinary Delights – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain professional knowledge and prepare regional Indian cuisines from different regions like Andhra Pradesh, West Bengal, Gujarat, Odisha, Rajasthan, Karnataka, Madhya Pradesh, Maharashtra, Tamil Nadu and north-eastern states etc. in bulk quantities while appreciating their history, heritage, geographical affinities, cultural effects as well as special delicacies.	✓	✓	✓		✓				✓		✓	
CO2:Understand and demonstrate their skills in planning, preparing, and presenting various community based cuisines like Hyderabadi, Avadhi, Parsee, Malabari / Syrian, Christian, Bohri etc. along with their history, heritage, geographical affinities, cultural effects as well as special delicacies.	✓	✓	✓		✓				✓		✓	
CO3:Appreciate and demonstrate the skills towards identifying, using, and taking proper care and maintenance of tandoors along with possession of detailed understanding towards Indian bread, snacks, and sweets.	✓	✓	✓		✓				✓		✓	

Table 174: Mapping between COs of HM4DBTI and POs

HM4DBTI:Distilled Beverages with Tobacco - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Appreciate different types of spirits based beverages like Whisky, Rum, Brandy, Gin, Vodka, Tequila etc. and demonstrate skills towards their classification, distillation and production processes along with brands details.	✓	✓	✓	✓	✓				✓			
CO2:To understand the concepts of liqueurs, bitters, and mixed drinks, and exhibit skills towards their typology, preparation methods, and brands.	✓	✓	✓	✓	✓				✓			
CO3:Apprehend the details and demonstrate skills towards the bar operations along with their classifications, layout planning and designing, staffing, costing, forms, formats, registers, and the control methods.	✓	✓	✓	✓	✓				✓			
CO4:Familiarize themselves with the concept of tobacco along with its production process, brands, storage, and service procedures.		✓	✓	✓	✓				✓			

Table 175: Mapping between COs of HM4DBTII and POs

HM4DBTII:Distilled Beverages with Tobacco - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain professional knowledge and demonstrate appropriate skills regarding the operations in a professional bar set up within the hotel industry like layout planning, designing, staffing, preparation of menu, costing, control mechanism, stock maintenance etc.	✓	✓	✓	✓	✓		✓		✓			
CO2:Understand and exhibit their skills in planning, preparing, serving, and presenting various types of beverages like whiskey, rum, brandy, gin, vodka, tequila, cocktails and mock-tails etc.	✓	✓	✓	✓	✓		✓		✓			
CO3:Appreciate and showcase the skills towards various activities involved in the beverage and tobacco serving operations including.	✓	✓	✓	✓	✓		✓		✓			

Table 176: Mapping between COs of HM4FOGSI and POs

HM4FOGSI:Front Office Guest Services - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:To appreciate and showcase the desired levels of skills towards the cash handling operations in the front office department along with the detailed processes of guest registration.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO2:To understand and showcase proficiency towards the concepts of managing guest accounts including credit management, transaction tracking, and updation of records.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO3:Apprehend the details importance and exhibit detailed procedural approaches towards night audits operations.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
CO4:Familiarize themselves with the concept of credit control mechanisms and controlling measures in front office department.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

Table 177: Mapping between COs of HM4FOGSII and POs

HM4FOGSII:Front Office Guest Services - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain professional knowledge and demonstrate appropriate skills regarding the operations in a front office department like preparation, maintenance of guest accounts.	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO2:Understand and exhibit their skills in operating the PMS system.		✓			✓	✓			✓			
CO3:Appreciate and illustrate the skills towards various activities involved in the night auditing.		✓		✓	✓	✓	✓	✓	✓			
CO4:Apprehend and showcase their skills in preparation of various forms, formats, and registers used in the front office department.	✓	✓	✓		✓	✓			✓			

Table 178: Mapping between COs of HM4HKSI and POs

HM4HKSI:Housekeeping Services - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:To appreciate and showcase skills towards the emergency situation handling procedures in hotel industry in general and housekeeping department in particular.	✓	✓	✓	✓	✓				✓			
CO2:To understand and appropriately apply the concepts of interior decoration its classifications and design elements.	✓	✓	✓	✓	✓				✓			
CO3:Apprehend the importance and exhibit skills towards detailed mechanism of lightings, window treatment along with the care and maintenance of furniture and fittings.	✓	✓	✓	✓	✓				✓			
CO4:Familiarize themselves with the concepts of wall and floor coverings, their selection process, care, and usages.	✓	✓	✓	✓	✓				✓			

Table 179: Mapping between COs of HM4HKSII and POs

HM4HKSII:Housekeeping Services - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain professional knowledge and demonstrate appropriate skills regarding preparation, application, care and maintenance first aid kits etc.		✓	✓	✓	✓	✓			✓			
CO2:Understand and exhibit their skills in handling emergency situations caused both by natural or man-made means like fires, fumes, gas leakage, sickness, riots, deaths etc.	✓	✓	✓	✓	✓	✓	✓		✓			
CO3:Appreciate and showcase the skills towards various activities involved in interior decorations, including lightings, window decorations and wall and floor coverings etc.	✓	✓	✓	✓	✓				✓			

Table 180: Mapping between COs of HM4POMI and POs

HM4POMI:Principles of Marketing - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:To appreciate and demonstrate conceptual knowledge towards the marketing function by understanding the business environment and various factors affecting the functions of a business.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO2:To understand and exhibit the desired level of intellect towards applying the various tools of marketing towards creating and satisfying the demand in the market place.	✓	✓	✓	✓	✓	✓			✓	✓	✓	
CO3:Recognize the social and ethical implications of consumer behavior and apply the appropriate techniques towards generating market solutions.	✓	✓	✓	✓	✓			✓	✓	✓	✓	
CO4:Apprehend the importance of strategies and showcase the skills to apply them in the marketing function in order to attract, manage, satisfy, and retain the customers to achieve customer lifetime values.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
CO5:Familiarize themselves with the concepts of services marketing in general and tourism products in particular and be able to apply contemporary and innovative strategies to achieve sustainable competitive advantages for the business.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓



Table 181: Mapping between COs of HM4FSDI and POs

HM4FSDI:Food Science and Dietetics - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:To appreciate and demonstrate conceptual knowledge towards the chemistry of food items along with food microbiology, classifications, and their effects along with the use of disinfectants.		✓	✓	✓	✓			✓	✓	✓		
CO2:To understand and exhibit the desired level of intellect towards food processing mechanisms along with food safety precautions to be adopted in commercial food processing units.	✓	✓		✓	✓				✓			
CO3:Apprehendand demonstrate the skills towards the concept offood preservations along with its principles, methods and reasons for spoilages.	✓				✓				✓			
CO4:Familiarizethemselves and demonstrate the desired skills towards the concepts of therapeutic nutrition, food allergies, and diet counseling.	✓	✓			✓				✓			

Table 182: Mapping between COs of HM6LBICI and POs

HM6LBICI:Larder, Bakery & International Cuisines - Theory (												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Appreciate about the larder kitchen along with its importance, layout, hierarchy, duties and responsibilities of personnel, common ingredients used etc. and exhibit skills towards the management aspects.	✓	✓	✓	✓	✓				✓			
CO2:Understand and produce various products at the larder kitchen including the marinated products, force meat products, gelatin products, cold meat platters, centre pieces etc. along with understanding the menu responsibilities there.	✓			✓	✓				✓			
CO3:Apprehend and exhibit skills towards the concept of food presentations in commercial operations including the roles of garnishes and accompaniments, edible and non-edible displays, principles of presentations etc.	✓		✓		✓	✓		✓	✓			
CO4:Gain knowledge and exhibit skills towards advanced preparations in bakery sections including glazes, Meringue, cold sweets, sandwiches, chocolates, and sugar arts etc.	✓				✓				✓			
CO5:Acknowledge and use varieties of herbs, wines, and spirits in cookery along with detailed understandings of different International cuisines like British, French, Italian, Mexican, Spain and Portugal, Oriental –Chinese , Thai etc.	✓				✓				✓		✓	

Table 183: Mapping between COs of HM6LBICII and POs

HM6LBICII:Larder, Bakery & International Cuisines - Practical (												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain professional knowledge and exhibit towards preparing and presenting various International cuisines from different regions like British, French, Italian, Mexican, Spain, Portugal, Chinese, and Thai etc. in bulk quantities while appreciating their history, heritage, geographical affinities, cultural effects as well as special delicacies.	✓	✓	✓	✓	✓				✓			
CO2:Understand and demonstrate their skills in planning, preparing, and presenting various larder kitchen products like marinated items, forcemeat products, Chaud-froid Products, Salads, Canapes and Sandwiches, cold meat platters, centerpieces etc.	✓	✓	✓	✓	✓				✓			
CO3:Appreciate and demonstrate the skills towards planning, preparing and presenting various bakery and confectionary products like meringue, chocolate based products, still frozen desserts, ice-creams, edible and non-edible displays, gelatin products etc.	✓	✓	✓	✓	✓				✓			
CO4:Apprehend and display skills towards carving arts along with icing techniques.	✓	✓	✓	✓	✓				✓			

Table 184: Mapping between COs of HM6MFBSOI and POs

HM6MFBSOI:Management of F&B Service Operations - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:To appreciate details about the food and beverage operations in commercial establishments and exhibit skills towards management of the functions, people, by allocation and supervision of responsibilities and constraints.	✓	✓	✓	✓	✓	✓			✓			
CO2:To understand and apply the inventory control mechanisms in business operations.	✓			✓	✓				✓			
CO3:Apprehend the details of food and beverage management control techniques with detailed outlooks towards food and beverage control cycle, personnel management, problems along with the understanding towards the concept of costs and sales and demonstrate appropriate skills towards managing them.		✓			✓			✓	✓			
CO4:Gain advanced knowledge and showcase skills towards budgetary control process in food and beverage management department along with revenue control procedures.		✓		✓	✓			✓	✓			

Table 185: Mapping between COs of HM6MFBSOII and POs

HM6MFBSOII:Management of F&B Service Operations - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain professional knowledge and exhibit skills towards inventory control mechanisms.	✓			✓	✓	✓	✓	✓	✓			
CO2:Appreciate and demonstrate the skills towards preparation of budgetary control procedures.	✓			✓	✓		✓	✓	✓			
CO3:Apprehend and display skills towards use of various tools, equipment, and applications used for food and beverage management and control processes.	✓			✓	✓				✓			

Table 186: Mapping between COs of HM6FOMI and POs

HM6FOMI:Front Office Management - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:To appreciate the concept of yield management, its principles, components, and processes as applicable in hospitality avenues and demonstrate skills towards handling them for effectiveness in the business operations.	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO2:To understand the selling concept and exhibit skills towards its planning, process, and various means to reach the customer base in hospitality business operations.	✓				✓		✓	✓	✓			
CO3:Apprehend the details of property management system interfaces and showcase their skills in operating them.	✓	✓		✓	✓				✓			
CO4:Gain advanced knowledge towards hotel information systems, guest accounting, along with operational aspects and display the desired levels of skill sets.	✓			✓	✓				✓			

Table 187: Mapping between COs of HM6FOMII and POs

HM6FOMII:Front Office Management - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain professional knowledge and exhibit skills towards using the PMS software proficiently.	✓	✓		✓	✓				✓			
CO2:Appreciate and demonstrate the skills operating various equipment and computer based application used in front office department.	✓				✓				✓			
CO3:Apprehend and display skills towards various front office functions like handling guest enquiries, grievance handling procedures, situation handling, suggestive selling, telecommunication, and email etiquettes etc.	✓	✓	✓	✓	✓	✓		✓	✓			

Table 188: Mapping between COs of HM6AHKMI and POs

HM6AHKMI:Art of Housekeeping Management - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:To appreciate and demonstrate skills towards the planning, and organization of housekeeping operations applicable in the hospitality business along with staffing, allocation of works, scheduling, maintenance of various registers, work analysis, and appraisals etc.	✓				✓				✓			
CO2:Understand and exhibit skills in purchasing function of hospitality operations along with budgetary controls.	✓	✓		✓	✓	✓	✓	✓	✓			
CO3:Apprehend and practically utilize the functions of requisition, acquisition, inventorying, and storing operations in hospitality businesses.	✓				✓	✓	✓	✓	✓			
CO4:Gain advanced knowledge and practice supervision, including self as well as others and the various checklists to be maintained as per the needs.	✓	✓			✓				✓			
CO5:Recognize and utilize the renovation aspects including classifications and latest trends.	✓	✓	✓		✓	✓						



Table 189: Mapping between COs of HM6AHKMII and POs

HM6AHKMII:Art of Housekeeping Management - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain professional knowledge and exhibit skills towards various house-keeping operations like staffing, scheduling, briefing etc. proficiently.	✓	✓		✓	✓	✓		✓				
CO2:Appreciate and demonstrate the skills towards essential operations of housekeeping department like preparation of requisition, acquisition of materials, inventorying and storing them as well as issuance and replenishments.	✓			✓	✓	✓						
CO3:Apprehend and display skills towards grievance handling mechanisms as applicable in housekeeping operations along with maintenance of guests' privacy.	✓			✓	✓			✓	✓			
CO4:Understand and showcase skills towards renovation and decoration operations as desired in the hospitality business operations.	✓				✓			✓	✓			

Table 190: Mapping between COs of HM6OBHRMI and POs

HM6OBHRMI: Organization Behaviour & Human Resource Management – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1: To appreciate the details and exhibit skills towards understanding and responding towards the behaviors of individual and groups of people associated with the business operations.			✓	✓	✓	✓		✓		✓	✓	
CO2: Understand and demonstrate skills towards applying various motivational theories, leadership styles as well as the grievance handling mechanisms that come across the day to day business operations.			✓	✓	✓					✓	✓	
CO3: Apprehend and use the various human resource management functions like human resource planning, recruitment, selection, training and development, performance appraisal, promotion, transfer, exit etc. in order to manage the workforce and ensure best performance from them towards achieving the business goals.			✓	✓	✓		✓					
CO4: Gain advanced knowledge towards organizational cultures, changes and demonstrate appropriate skills towards application of various strategies to manage them effectively.			✓		✓						✓	

Table 191: Mapping between COs of HM6HEMI and POs

HM6HEMI:Hotel Engineering & Maintenance - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:To appreciate the details and exhibit skills towards maintenance operations in the hotel industry including understating of the organizational chart, duties and responsibilities, work flow chart, classifications of maintenance operations, equipment handling, economics as well as detailed mechanisms.	✓	✓	✓		✓				✓			
CO2:Understand and demonstrate skills towards the hotel planning and designing operations including sight selection, planning mechanisms, budgeting, evaluation of alternatives, thumb rules, scheduling and allocation functions.	✓				✓		✓	✓	✓			
CO3:Apprehend and appropriately use the concepts of facilitates management operations including the maintenance of lighting, heating, ventilation, and air conditioning systems, drain water evacuation, and safety and security systems.	✓	✓			✓				✓			
CO4:Gain advanced knowledge and display skills towards energy management system along with the details about their costing, maintenance and emergency procedures.	✓				✓		✓	✓				

Table 192: Mapping between COs of HM7LAHSI and POs

HM7LAHSI:Legal Aspects in Hospitality Sector - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:To appreciate and show appropriate skills towards the basic contract act applicable on the host and guest relationships which forms the foundation of the hospitality operations including receiving the guests, obligations to protect them as well as the liability in case of loss of their valuables etc.	✓	✓		✓	✓			✓		✓		
CO2:To understand the core concepts and exhibit skills towards the formation and operation of hospitality businesses that will help them in extending their legal reasoning capabilities towards both legal and ethical practices.	✓	✓			✓					✓		
CO3:Apprehend the details of risk assessment and management in hospitality business operations and demonstrate skills towards handling the unfavorable situations.	✓	✓	✓		✓	✓				✓		
CO4:Gain knowledge towards the rights and liabilities of food and beverage operators and skills towards operating the related businesses successfully while coping with the legal requirements.	✓	✓			✓					✓		
CO5:To appreciate the contemporary and emerging issues of quality control, and be able in managing the multicultural workforce as well as dealing with various licenses and permits required for the business operations.	✓	✓		✓	✓					✓		

Table 193: Mapping between COs of HM7ESI and POs

HM7ESI:Environmental Science- Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Appreciate details about the natural environment as a system and exhibit skills towards analyzing its effects on business operations.		✓	✓		✓							
CO2:Understand and demonstrate skills to synthesize and manage the natural and man-made environment in order to ensure harmony and achieve eco friendliness in operations.				✓				✓		✓		
CO3:Apprehend and exhibit skills towards understanding and preparation of the environmental management systems employed in modern day hospitality businesses.	✓		✓		✓							
CO4:Gain knowledge towards the best and innovative practices involved in hotel businesses and demonstrate skills towards environment management, energy management, water conservation, waste management, pollution control, and safe guarding the premises etc.		✓			✓			✓		✓		
CO5:Appreciate the use of alternative energy sources used for hotel operations and know the traits for applying them in businesses.		✓		✓	✓			✓				
CO6:Recognize the various effects of environment pollution on business operations and be able to work towards mitigating them.	✓				✓					✓		

Table 194: Mapping between COs of HM7EHI and POs

HM7EHI:Entrepreneurship in Hospitality Industry – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Appreciate details about the concept of entrepreneurship, its effects on economy and society, benefits, challenges involved and should be able to analyze the business environment in order to identify the micro and macro factors affecting its operations.	✓	✓	✓	✓	✓			✓		✓	✓	✓
CO2:Apprehend and exhibit the essential and desired entrepreneurship traits like patience, hard-work, perseverance, critical thinking, honesty, integrity and ethical behavior etc.				✓	✓						✓	✓
CO3:Gain knowledge towards the strategic management issues for handling human resources, innovation, production, finance, distribution, sales and marketing, after sales services, customer relationship management and demonstrate skills towards their practical implications.	✓		✓	✓	✓							
CO4:Appreciate the use of networking and information handling in the business operations and exhibit skills towards their proper utilizations.		✓			✓			✓			✓	
CO5:Comprehend the operational details regarding starting of a new food and beverage avenue of their own and demonstrate appropriate skills to prepare viable business plans.	✓			✓	✓							

Table 195: Mapping between COs of HM7MAHSI and POs

HM7MAHSI:Management of Allied Hospitality Services- Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Appreciate the role of services sector in the modern day economy along with its characteristics, operational details, unique features, challenges associated with them, factors affecting the operations, and thereby exhibit appropriate skills towards working in a multicultural and multidimensional service sector avenue successfully.	✓	✓	✓	✓	✓							
CO2:Understand and demonstrate pertinent skills towards the concept of MICE management in order to organize and manage various types of events including meeting, incentive tours, conventions / conferences and expositions / exhibitions etc.	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO3:Apprehend and exhibit the essential and desired traits towards interpreting and successfully managing the contemporary and emerging issues in services sector in order to achieve sustainable competitive advantage.	✓	✓			✓		✓		✓			

Table 196: Mapping between COs of HM7AFPMI and POs

HM7AFPMI:Advanced Food Production Management - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Appreciate the importance of kitchen layout and designing along with principles, factors to be considered, challenges, store management, supplier relationships, production scheduling, quality and quantity control in advanced kitchen operations.	✓	✓	✓	✓	✓	✓		✓	✓			
CO2:Understand and demonstrate appropriate skills towards the concepts of centralized food production, transportation, and distribution systems, concepts and operations of finishing kitchens, etc.	✓	✓	✓	✓	✓				✓			
CO3:Apprehend and exhibit the essential and desired traits towards new food product development processes, their trials, testing, evaluation activities, kitchen stewarding etc.	✓	✓	✓	✓	✓	✓			✓			
CO4:Gain knowledge and exhibit deliberations towards the food promotional activities such as arrangements of occasion based special events including outdoor caterings, banqueting operations, arrangement of food festivals, trade shows, exhibitions, etc.	✓				✓	✓		✓	✓			
CO5:Recognize and demonstrate affinities towards food literary activities such as writing of food blogs, books, articles, compilation of recipes, reviews, comparisons, along with food photography.						✓	✓	✓	✓			



Table 197: Mapping between COs of HM7AFPMII and POs

HM7AFPMII:Advanced Food Production Management - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain professional knowledge and exhibit skills towards preparing and presenting various advanced International cuisines from different regions like British, French, Italian, Mexican, Spain, Portugal, Chinese, and Thai etc. in bulk quantities while appreciating their history, heritage, geographical affinities, cultural effects as well as special delicacies.	✓	✓	✓	✓	✓				✓			
CO2:Recognize the growing demands for fast food items and be able to produce high quality items in both Indian and International contexts like Pizza, Burgers, Hot dogs, pastas, noodles etc. along with their accompaniments.				✓	✓							
CO3:Understand and demonstrate their skills in planning, preparing and presenting various nutritious and low calorie as well as therapeutic food items in bulk quantities which has become the need of the time.	✓				✓				✓	✓	✓	
CO4:Appreciate and demonstrate the skills towards planning, preparing, and presenting various advanced bakery and confectionary products like fancy cakes, puddings, savoury items, chocolate based products, international desserts, ice-creams, etc.	✓		✓		✓				✓			
CO5:Apprehend and display skills towards carving arts along with icing techniques, edible and non-edible displays, chocolate garnishes, bread baskets, sugar arts etc.					✓				✓			

Table 198: Mapping between COs of HM7AFBMI and POs

HM7AFBMI:Advance Food & Beverage Management - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Appreciate the importance of menu management and show affinities towards classifying and designing them as per the occasions and budgets along with menu merchandizing and engineering activities.	✓	✓			✓	✓		✓				
CO2:Understand and demonstrate appropriate skills towards handling the entire food and beverage management operations across different avenues like hotels, restaurants, fast food and take away centers, institutional and industrial catering activities, food festivals, exhibitions, special events, banqueting etc.	✓				✓			✓	✓			
CO3:Apprehend and exhibit the essential and desired traits towards supervisory control mechanisms to streamline the food and beverage operations on large scale basis and commercial purposes.	✓				✓			✓				
CO4:Gain knowledge and exhibit deliberations towards the customer relationship management in order to gain, maintain and retain the customers with the businesses in order to gain sustainable competitive advantage.	✓		✓	✓	✓			✓				

Table 199: Mapping between COs of HM7AFBMII and POs

HM7AFBMII:Advance Food & Beverage Management - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain professional knowledge and exhibit skills towards preparing, presenting and managing the menu related activities for various food and beverage operations across different settings.	✓	✓			✓							
CO2:Recognize the importance of food and beverage control and exhibit skills towards practical implications of it in various operations across different settings like hotels, restaurants, ODCs, special events, banqueting etc.		✓			✓							
CO3:Understand and demonstrate their skills in planning, preparing and presenting various function prospectus to the clients in order to obtain business.		✓			✓	✓			✓			
CO4:Appreciate and demonstrate the skills towards planning, preparing, organizing and executing various types of functions and events.	✓	✓			✓	✓		✓				
CO5:Apprehend and display skills towards customer relationship management activities in order to gain and sustain a long term bond with them.	✓	✓	✓	✓	✓			✓				

Table 200: Mapping between COs of HM7AFOMI and POs

HM7AFOMI:Advanced Front Office Management - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Appreciate the importance of estimating, planning, and preparing activities in front office operations and show affinities towards activities of forecasting, costing, profiling, segmenting, promoting, selling, customer care etc.	✓		✓		✓			✓				
CO2:Understand and demonstrate appropriate skills towards ensuring the safety and security of the guests and staffs operating in a dynamic yet uncertain business environment etc.	✓		✓		✓				✓			
CO3:Apprehend and exhibit the essential and desired traits towards supervisory control mechanisms to streamline the front office operations.	✓	✓	✓		✓							
CO4:Gain knowledge and exhibit deliberations towards the customer relationship management in order to gain, maintain and retain the customers with the businesses in order to gain sustainable competitive advantage.	✓	✓	✓	✓	✓			✓				
CO5:Familiarize themselves with the layout and designing aspects and show skills towards planning, operating, maintaining, securing as well as repairing the place of operation.	✓	✓	✓	✓	✓		✓	✓	✓			

Table 201: Mapping between COs of HM7AFOMII and POs

HM7AFOMII:Advanced Front Office Management - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Recognize the importance of customer relationship management for businesses and be able to exhibit adequate skills towards serving them to the best of their abilities during service encounter phase.	✓	✓	✓	✓	✓			✓				
CO2:Gain professional knowledge and exhibit skills towards acquiring, serving, managing, and maintaining customers for the business house.	✓	✓	✓	✓	✓	✓		✓				
CO3:Understand the various types of emergency situations and demonstrate their skills in planning, preparing, and confronting them successfully.	✓	✓			✓	✓		✓	✓			
CO4:Appreciate and demonstrate the skills towards facility planning and management operations in order to ensure a safe, secure, clean, energy efficient, and environment friendly premise for the customers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

Table 202: Mapping between COs of HM7AHKMI and POs

HM7AHKMI:Advanced Housekeeping Management - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Appreciate the importance and procedures of the outsourcing and contracting out practices of the housekeeping services and show affinities towards managing them effectively including process of tenders, guidelines, controlling measures and detailed mechanisms.	✓	✓	✓	✓	✓	✓		✓				
CO2:Understand the principles of ergonomics and demonstrate appropriate skills towards ensuring them in the business operations and facilities in order to derive efficiencies in service deliveries and achieving optimum levels of comfort for the guests.	✓				✓	✓			✓			
CO3:Apprehend and exhibit the essential and desired traits towards the eco-friendly practices in commercial operations such as energy and water conservation techniques, use of eco-friendly products in housekeeping operations, ensuring efficiency in all housekeeping activities to minimize wastages etc.	✓	✓	✓	✓	✓			✓				
CO4:Gain knowledge towards horticulture activities and exhibit deliberations towards the gardening and flower arrangements activities etc. involved in hotel operations.	✓				✓				✓			
CO5:Familiarize themselves with the global housekeeping practices and show adequate skills towards planning, executing and managing the housekeeping operations for commercial ventures profitably.	✓			✓	✓							✓

Table 203: Mapping between COs of HM7AHKMII and POs

HM7AHKMII:Advanced Housekeeping Management - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain professional knowledge towards the operations of the housekeeping control desk and exhibit skills towards managing them professionally.	✓	✓	✓	✓	✓				✓	✓		
CO2:Understand the various types of emergency situations and demonstrate their skills in planning, preparing, and confronting them successfully.	✓				✓	✓			✓			
CO3:Appreciate the and demonstrate the skills towards facility planning and management operations in order to ensure a safe, secure, clean, energy efficient, and environment friendly premise for the customers.	✓		✓	✓	✓				✓			
CO4:Recognize the importance of horticulture and be able to exhibit adequate skills towards gardening, flower arrangement operations, and special decorations, in commercial hospitality establishments.	✓				✓				✓			

Table 204: Mapping between COs of HM8OJTII and POs

HM8OJTII:22 Weeks On the Job Training												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain hands-on exposure in the core hospitality business operations and demonstrate skills towards a balanced approach between theoretical concepts read and practical implications of them while dealing with the customers.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO2:Gain professional knowledge and exhibit appropriate skills in handling various hospitality operations.	✓	✓			✓	✓	✓	✓	✓			
CO3:Understand the importance and demonstrate the essential industry traits like customer service, devotion, honesty, integrity, curiosity, hard-work, and tireless attitude etc.		✓			✓					✓	✓	✓
CO4:Apprehend and demonstrate the critical thinking and problem solving skills towards real world situations.	✓	✓	✓	✓	✓						✓	
CO5:Appreciate their own core competencies that will guide them towards possessing impactful leadership and professional skills.	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO6:Develop awareness and respectful attitudes towards working in a multi-dimensional and multi-cultural environment.										✓	✓	✓



Table 205: Mapping between COs of HM5ITII and POs

HM5ITII:22 Weeks Industrial Training												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Harmonize between theoretical concepts and practical implications in a better manner.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO2:Gain professional knowledge and exhibit appropriate skills in handling various hospitality operations.	✓	✓			✓	✓	✓	✓	✓			
CO3:Understand the importance and demonstrate the essential industry traits like devotion, honesty, integrity, curiosity, hard-work, and tireless attitude etc.		✓			✓					✓	✓	✓
CO4:Apprehend and exhibit the critical thinking and problem solving skills towards real world situations.	✓	✓	✓	✓	✓						✓	
CO5:Appreciate their own core competencies that will guide them towards possessing impactful leadership and professional skills.	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO6:Develop awareness and respectful attitudes towards working in a multi-dimensional and multi-cultural environment.										✓	✓	✓

### 3.4.2 BBA (Hons.) in Hospitality & Culinary Arts

Table 206: Mapping between COs of BC1HTI and POs

BC1HTI:Basics of Hospitality & Tourism Sectors – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and exhibit necessary skills towards describing the basics of hotel industry, its origins, growth over the years, current status and trends, future prospects and emerging issues, as well as the detailed classifications.	✓		✓	✓	✓							✓
CO2:Understand and demonstrate appropriate skills towards defining phenomena of tourism, global trends, typology, existing and emerging concepts.	✓			✓	✓							✓
CO3:Appreciate themselves with various tourism organizations that forms the core of the global tourism industry.	✓			✓	✓							
CO4:Acknowledge the concepts of various hospitality and tourism sector products, their nature, classifications, as well as the display competencies towards the process of designing and showcasing them to global audience.	✓			✓	✓							

Table 207: Mapping between COs of BC1PKI and POs

BC1PKI:Product Knowledge – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain detailed knowledge towards the various ingredients commonly used in food production processes such as dairy products, eggs, cereal products, vegetables, fruits, herbs, fish and meat items etc. and explain their evolutions in uses, characteristics, features, sources, detailed classifications, and nutritional values.	✓	✓			✓				✓			
CO2:Apprehend the details of dairy products, eggs, cereal products, vegetables, fruits, herbs, fish and meat items etc. used in food production processes and exhibit necessary competencies towards their purchase, and storage mechanisms.	✓				✓		✓		✓			
CO3:Understand the key aspects and effects of various dairy products, eggs, cereal products, vegetables, fruits, herbs, fish and meat items etc. on food production operations and demonstrate proficiency towards their professional uses in modern day cookery operations.	✓				✓			✓	✓			

Table 208: Mapping between COs of BC1FPI and POs

BC1FPI:Basics of Food Production – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and explain the basics of professional cookery, aims, objectives, history and evolution over the years.	✓		✓	✓	✓				✓			
CO2:Apprehend and illustrate the desired abilities towards for preparation of the detailed kitchen layouts, organizational structures, different operational, executive and managerial positions, and their duties and responsibilities etc. along with proper usages of various tools, equipment, and safety measures.	✓			✓	✓	✓	✓	✓	✓			
CO3:Understand and should be able to recognize the various commodities commonly used in the kitchen, their functions, storage techniques, proper usages, techniques of preparations, classifications, and cookery.	✓			✓	✓			✓	✓			
CO4:To appreciate and apply different methods used in professional cookery.					✓				✓			

Table 209: Mapping between COs of BC1FP11 and POs

BC1FP11:Basics of Food Production – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain professional knowledge towards bulk food preparations and demonstrate adequate skills towards preparation of basic items in cookery.	✓	✓	✓		✓				✓			
CO2:Acknowledge and recognize the varieties of tools and equipment, raw materials and ingredients used in the used in commercial kitchens operations and demonstrate their suitable usages.	✓				✓				✓			
CO3:Appreciate the basic principles of bakery and confectionary along with exhibition of basic skills towards preparation of basic bakery products	✓	✓			✓				✓			

Table 210: Mapping between COs of BC1FBI and POs

BC1FBI:Basics of Food & Beverage Service – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the details of the food and beverage management department along with their structures, duties and responsibilities of the personnel, relationships with other departments, operations of auxiliary areas such as coffee shop, snack bar, counter services, theme restaurant, banquet, bar, etc and demonstrate adequate skills towards their proficient operations.	✓	✓		✓	✓	✓			✓			
CO2:Familiarize themselves with the identification, usages, care, and maintenance of various tools, equipment, table wares, service wares, special equipment, furniture, linens etc. along with show proficiencies in Mise-en-place, Mis-en-Scene preparations.	✓	✓			✓				✓			
CO3:Gain detailed knowledge towards the various service methods, techniques, and styles of food and beverage operations adopted in commercial establishments and proficiently exhibit skills towards their appropriate uses in commercial food and beverage establishments.	✓	✓		✓	✓			✓				
CO4:Show affinity towards the concepts of menus, relevance, types, and principles and exhibit adequate skills towards their planning mechanisms in order to facilitate the food and beverage operations.	✓			✓	✓			✓	✓			

Table 211: Mapping between COs of BC1FBII and POs

BC1FBII:Basics of Food & Beverage Service – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate the basic skills and techniques required for food and beverage service operations.	✓	✓	✓	✓	✓				✓			
CO2:Gain technical knowledge and detailed comprehensions towards identification, classifications, and proper usage of various tools and equipment used in restaurants.	✓	✓	✓	✓	✓				✓			
CO3:Acknowledge and demonstrate skills towards setting up various types of table layouts and covers as per the occasion and demand.	✓	✓	✓	✓	✓				✓			
"CO4:Appreciate and demonstrate skills towards guest receiving procedures and order taking along with serving. "	✓			✓	✓	✓		✓	✓	✓		

Table 212: Mapping between COs of BC1FOI and POs

BC1FOI:Basics of Front Office – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain detailed knowledge towards the history, evolution, growth, and developmental aspects of hotel industry and demonstrate adequate skills towards explaining their contribution towards nation building along with interrelationships between travel, tourism, and hospitality.	✓	✓	✓	✓	✓				✓			
CO2:Familiarize themselves with the detailed classification of hotel industry based upon different criteria of size, clientele, location, levels of service, ownership, etc.				✓	✓	✓		✓				
CO3:Appreciate the detailed organizational structure of the front office department and exhibit adequate skills in defining, designing, staffing, duty allocation, operation, supervision, etc.					✓			✓	✓	✓	✓	
CO4:Show comprehensions towards the guest cycle and demonstrate adequate skills in managing the pre-arrival, arrival, occupancy, departure and post-departure procedures as well as the night auditing, reconciliation operations for effectively and efficiently.				✓	✓	✓	✓	✓	✓			



Table 213: Mapping between COs of BC1FOII and POs

BC1FOII:Basics of Front Office – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the relevance of communication and demonstrate proficiency in handling the guest receiving and servicing operations through demonstration of appropriate body language, attitude, verbal and written communications as well as mannerisms.	✓			✓	✓	✓		✓	✓		✓	
CO2:Gain technical knowledge and detailed comprehensions towards identification, classifications, and proper usage of various forms, formats, registers, tools and equipment used in front office department.	✓	✓	✓	✓	✓	✓			✓			
CO3:Acknowledge and demonstrate skills towards handling various types of situation during the front office operations in commercial establishments.	✓				✓	✓		✓	✓	✓	✓	✓

Table 214: Mapping between COs of BC1AOI and POs

BC1AOI:Basics of Accommodation Operations – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain detailed knowledge towards the relevance of housekeeping department and explain their layout, organizational structures, as well as the duties and responsibilities of the personnel.	✓			✓	✓	✓		✓	✓	✓		
CO2:Familiarize themselves with the detailed housekeeping operations along with the effective use of various files, registers, tools, equipment, and cleaning agents used there.	✓				✓	✓	✓		✓	✓	✓	
CO3:Appreciate the details of guest rooms and show affinities towards their structures, layouts, essential supplies, amenities, keys, along with their cleaning and maintenance procedures.	✓			✓	✓							
CO4:Show comprehensions towards various types of surfaces, fabrics, linens, and demonstrate adequate skills towards their cleaning, care, and maintenance along with detailed understandings towards the laundry operations and PEST control activities.	✓			✓	✓	✓	✓		✓	✓		

Table 215: Mapping between COs of BC1AOII and POs

BC1AOII:Basics of Accommodation Operations – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the relevance of housekeeping department and demonstrate proficiencies in handling various tools, equipment, and cleaning agents along with their proper utilizations in housekeeping operations.	✓	✓			✓				✓			
CO2:Gain technical knowledge towards the operations at housekeeping control desk and exhibit the necessary skills towards their efficient functioning through proper identification of surfaces, stains, mechanisms of their removal, and maintenance.	✓	✓		✓	✓	✓			✓	✓		
CO3:Appreciate the details regarding the types of surfaces, linen, guest rooms supplies, key handling mechanisms, maids trolley etc. and demonstrate adequate skills towards their effective operations in order to ensure a clean, safe, and secure premise.	✓	✓		✓	✓				✓			

Table 216: Mapping between COs of BC2FPI and POs

BC2FPI:Food Production Operations- Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the foundations professional cookery and demonstrate adequate skills towards the preparations of Stocks, Sauce, Soups, and Salads.	✓	✓			✓			✓	✓			
CO2:Apprehend the details of bakery and confectionary section in a commercial kitchen and show proficiencies in identifying the tools, equipment, ingredients used there and produce various bakery based products like cakes, bread, pastries etc.	✓	✓			✓				✓			
CO3:Gain knowledge towards the fish, meat, pork, poultry, and games cookery and show affinities towards their preparations.	✓	✓			✓				✓			
CO4:Appreciate and demonstrate skills towards planning and implementing menu for cooking operations as well as familiarize themselves with the various culinary terms used in the commercial operations.	✓	✓	✓	✓	✓	✓		✓	✓		✓	

Table 217: Mapping between COs of BC2FP11 and POs

BC2FP11:Food Production Operations- Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate their skills in preparing the basics items of professional cookery like stocks, sauces, soups and salads etc.	✓	✓	✓	✓	✓		✓	✓	✓		✓	
CO2:Gain professional knowledge and exhibit skills towards the preparation of international menu comprising of three to four courses of cuisines.	✓	✓	✓	✓	✓			✓	✓	✓	✓	
CO3:Acknowledge, identify, classify, and demonstrate skills regarding preparation of varieties of cuts and folds of vegetables, fish, meat items etc.	✓	✓		✓	✓				✓			
CO4:Appreciate and demonstrate the skills towards preparation of various bakery products like bread, pastry, cakes, hot/cold and Indian desserts etc.	✓	✓		✓	✓				✓			

Table 218: Mapping between COs of BC2WBI and POs

BC2WBI:Wine & Brewed Beverages – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the foundations of food and beverage operations and control mechanisms like management of control cycles, tools, equipment used for facilitation, KOT and BOT procedures, computerized operations etc. and demonstrate adequate skills towards their proficient uses in FandB outlets.	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO2:Apprehend the details of non-alcoholic beverages like tea, coffee, cocoa, nourishing drinks, refreshing drinks like juices, squashes, cordials, crushes, syrups and aerated water, table water, carbonated water etc. and demonstrate detailed comprehensions towards their origins, manufacturing processes, methods of preparation, types and brands	✓	✓		✓	✓				✓		✓	
CO3:Gain knowledge towards the beer along with other fermented beverages like sake, cider, perry etc. and show affinities towards their manufacturing processes, classifications, typologies, renowned brands, along with proficiencies towards their services to the customers.	✓	✓		✓	✓				✓		✓	
CO4:Appreciate and demonstrate skills towards harmony of foods with various types of wines along with detailed understandings of their manufacturing processes, classifications, typologies, brands, storage and service mechanisms, etc.	✓	✓		✓	✓				✓		✓	

Table 219: Mapping between COs of BC2WBII and POs

BC2WBII:Wine & Brewed Beverages – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate their skills in operating the food and beverage service operations through the proper usages of various types of forms, formats, and procedures.	✓				✓	✓			✓		✓	
CO2:Gain professional knowledge and exhibit skills towards the adaptation of proper and approved guest service sequence along with detailed comprehensions towards the table laying and crumbling down processes.	✓	✓	✓	✓	✓	✓						
CO3:Acknowledge, identify, classify, and demonstrate skills regarding services of various types of alcoholic and non-alcoholic beverages like water, lime soda, soft drinks, tea, coffee, cocoa, juices, milk shakes, beer, perry, sake, innovative mock tails, red wines, white wines, champagne etc.	✓	✓		✓	✓				✓		✓	
CO4:Apprehend and demonstrate appropriate skills towards preparations of various contemporary and innovative cock-tails and mock-tails.	✓	✓		✓	✓				✓		✓	

Table 220: Mapping between COs of BC2NFI and POs

BC2NFI:Nutrition & Food Science – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and exhibit knowledge towards the concepts of foods, their physical, psychological and social functions, factors affecting food intake and food habits etc.		✓	✓	✓	✓			✓	✓	✓	✓	
CO2:Gain detailed comprehensions towards the sources and role of micro and macro nutrients such as water, vitamins, minerals, carbohydrates, proteins, fats etc. on physical and psychological health.		✓			✓			✓				
CO3:Apprehend and demonstrate detailed comprehensions towards the concept of balanced diets including food pyramid, food groups, special diets, along with the issues of mal nutrition, under nutrition, and over nutrition etc.		✓	✓	✓	✓			✓	✓			



Table 221: Mapping between COs of BC2FMI and POs

BC2FMI:Facilities Planning & Management – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:To appreciate the details and exhibit skills towards maintenance operations in the hotel industry including understating of the organizational chart, duties and responsibilities, work flow chart, classifications of maintenance operations, equipment handling, economics as well as detailed mechanisms.	✓	✓		✓	✓	✓		✓	✓			
CO2:Understand and demonstrate skills towards the hotel planning and designing operations including sight selection, planning mechanisms, budgeting, evaluation of alternatives, thumb rules, scheduling and allocation functions.	✓	✓	✓	✓	✓	✓		✓	✓			
CO3:Apprehend and appropriately use the concepts of facilitates management operations including the maintenance of lighting, heating, ventilation, and air conditioning systems, drain water evacuation, and safety and security systems.				✓	✓			✓	✓			
CO4:Gain advanced knowledge and display skills towards energy management system along with the details about their costing, maintenance and emergency procedures.	✓			✓	✓				✓			✓

Table 222: Mapping between COs of BC2CSI and POs

BC2CSI:Communication Skills – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the importance and exhibit proper communication skills in managing the modern day businesses.	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓
CO2:Apprehendand make use of correct vocabularies and avoid commonly made errors in communication processes.	✓	✓	✓	✓	✓	✓		✓			✓	
CO3:Familiarizeand practice both verbal and non-verbal communication modes along with correct use of words, interviews, debating skills, group discussions and telephonic conversations.	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
CO4:Have thorough knowledge and demonstrate skills towards the official secretarial writing skills like note making, Precis writing, letter and memo drafting, preparation of curriculum vitae etc.	✓	✓	✓	✓	✓	✓		✓				

Table 223: Mapping between COs of BC2ITI and POs

BC2ITI:Basics of Information Technology – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the importance of data and information processing for business operations and exhibit adequate skills towards their collection, analysis, and dissemination processes through proper usages of technologies.	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓
CO2:Familiarize themselves with the various types of computers, tool, equipment and technologies and practice their utilities in business operations.					✓				✓		✓	
CO3:Apprehend and make use of various necessary, existing, and emerging office application software in order to make the information processing functions more effective.	✓	✓			✓				✓		✓	
CO4:Appreciate and demonstrate affinities towards the ethical, legal, and responsible usage of internet in modern day business activities.	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	

Table 224: Mapping between COs of BC2ITII and POs

BC2ITII:Basics of Information Technology - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and exhibit skills towards identifying and operating various types of computers and familiarize with the modern day software applications and technologies.	✓	✓	✓	✓	✓	✓			✓			
CO2:Gain technical knowledge and demonstrate skills towards the use various computer based applications.	✓	✓	✓	✓	✓				✓			
CO3:Acknowledge and demonstrate skills towards web browsing as well as ethical use of web based information resources.	✓	✓	✓	✓	✓	✓			✓	✓	✓	
CO4:Appreciate and demonstrate skills in using the technologies for creation and operation of their own virtual place on web like food blogs, face book pages related to hospitality operations.	✓	✓	✓	✓	✓	✓			✓		✓	

Table 225: Mapping between COs of BC3ECI and POs

BC3ECI:Indian Ethnic Cuisines – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the foundations of Indian cookery through gaining detailed comprehensions towards their history, heritage, geographical influences, factors affecting the food choices, spices, key ingredients used, special utensils and equipment, fuels used etc. and demonstrate adequate skills towards their identification, classification, and preparations methods.	✓	✓	✓		✓				✓			
CO2:Apprehend the details of northern and western Indian cookery along with their staple foods, occasional and festival cuisines, special delicacies, and show affinities towards their preparations in commercial set ups.	✓	✓	✓		✓				✓			
CO3:Gain knowledge towards the Eastern and Southern side States of India along with their staple foods, occasional and festival cuisines, special delicacies, etc. and demonstrate skills towards their preparations.	✓	✓	✓		✓				✓			
CO4:Appreciate and exhibit adequate skills towards detailed functioning of tandoor based items in the commercial operations.	✓	✓	✓		✓				✓			

Table 226: Mapping between COs of BC3ECII and POs

BC3ECII:Indian Ethnic Cuisines – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the basic Indian cuisines from different regions and demonstrate their skills in preparing the menus and indenting for quantity food production operations.	✓	✓			✓				✓		✓	
CO2:Gain professional knowledge and prepare regional Indian cuisines from different states like Kashmir, Punjab, Uttar Pradesh, Tamil Nadu, Goa, Kerala, Maharashtra, Madhya Pradesh, Karnataka, West Bengal, Gujarat, Odisha, Rajasthan, and Andhra Pradesh and other regions like Avadh, Chettinad, Malwani, North east etc. in bulk quantities while appreciating their history, heritage, geographical affinities, cultural effects as well as special delicacies.	✓	✓			✓				✓		✓	
CO3:Appreciate and demonstrate the skills towards identifying, using, and taking proper care and maintenance of different tools, equipment and utensils involved in quantity food production operations.	✓	✓		✓	✓				✓		✓	

Table 227: Mapping between COs of BC3ICI and POs

BC3ICI:International Cuisines - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the foundations Western cookery through gaining detailed comprehensions towards the use of various herbs, wines, spirits, history, heritage, geographical influences, factors affecting the food choices, spices, key ingredients used, special utensils and equipment, fuels used etc. and demonstrate adequate skills towards their identification, classification, and preparations methods.	✓	✓		✓	✓			✓	✓			
CO2:Apprehend the details of European and Mediterranean cookery including French, British, Spanish, Italian, Portuguese, and Mexican cuisines along with their staple foods, occasional and festival cuisines, special delicacies, and show affinities towards their preparations in commercial set ups.	✓	✓		✓	✓			✓	✓		✓	
CO3:Gain knowledge towards the Chinese, Japanese, Thai, and Indonesian cuisines along with their staple foods, occasional and festival cuisines, special delicacies, etc. and demonstrate skills towards their preparations.	✓	✓		✓	✓			✓	✓		✓	
CO4:Appreciate and exhibit adequate skills towards planning, preparations, and demonstration of fusion cuisines in the commercial operations.				✓	✓			✓	✓		✓	

Table 228: Mapping between COs of BC3ICII and POs

BC3ICII :International Cuisines – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the basics of western cookery from different regions and demonstrate their skills in preparing the menus and indenting for quantity food production operations.	✓	✓		✓	✓				✓			
CO2:Gain professional knowledge and prepare various International cuisines from different regions like French, British, Italian, Spanish, Portugal, Scandinavian, Mexican, Chinese, Japanese, Indonesian, Thai, Mongolian, etc. in bulk quantities while appreciating their history, heritage, geographical affinities, cultural effects as well as special delicacies.	✓				✓				✓	✓	✓	
CO3:Apprehend the details of fusion cuisines and exhibit proficiencies in preparing of them in an effective manner.	✓	✓		✓	✓				✓			
CO4:Appreciate and demonstrate the skills towards identifying, using, and taking proper care and maintenance of different tools, equipment and utensils involved in quantity food production operations.					✓				✓			



Table 229: Mapping between COs of BC3BMI and POs

BC3BMI :Distilled Beverage & Mixed Drinks – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Appreciate different types of spirits based beverages like Whisky, Rum, Brandy, Gin, Vodka, Tequila etc. and demonstrate skills towards their classification, distillation and production processes along with brands details.	✓	✓	✓	✓	✓			✓	✓		✓	
CO2:To understand the concepts of liqueurs, bitters, and mixed drinks, and exhibit skills towards their typology, preparation methods, and brands.	✓			✓	✓				✓		✓	
CO3:Familiarize themselves with the concept of tobacco along with its production process, brands, storage, and service procedures.	✓			✓	✓				✓			
CO4:Apprehend the details and demonstrate skills towards the detailed bar operations along with their classifications, layout planning and designing, staffing, costing, forms, formats, registers, and the control mechanisms.	✓			✓	✓			✓		✓		

Table 230: Mapping between COs of BC3BMII and POs

BC3BMI :Distilled Beverage & Mixed Drinks – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain professional knowledge and demonstrate appropriate skills regarding the operations in a professional bar set up within the hotel industry like layout planning, designing, staffing, preparation of menu, costing, control mechanism, stock maintenance etc.	✓			✓	✓	✓		✓	✓	✓	✓	
CO2:Understand andexhibit their skills in planning, preparing, serving, and presenting various types of beverages like whiskey, rum, brandy, gin, vodka, tequila, cocktails and mock-tails etc.	✓			✓	✓				✓			
CO3:Appreciate and showcase the skills towards various activities involved in the beverage and tobacco serving operations.	✓			✓	✓	✓		✓	✓		✓	

Table 231: Mapping between COs of BC3SHI and POs

BC3SHI:Food Safety & Hygiene – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Apprehend the physical, chemical, biological contaminations affecting the characteristics and quality of food items and demonstrate adequate skills towards the development, monitoring, and maintenance of food safety and quality assurance systems in commercial hospitality avenues.	✓	✓	✓	✓	✓		✓	✓	✓			✓
CO2:Understand, analyze and identify the various potential risk factors in the entire food system of commercial hospitality establishments and exhibit proficiencies towards mitigating them to ensure maintenance of quality and safety in the operations.	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓
CO3:Comprehend the details of various laws, regulations applicable to food processing, safety and quality assurance and show affinities towards using them in operational activities in food processing units.	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO4:Gain thorough knowledge towards the definition, evolution, pre-requisites and principles of hazard analysis critical control points (HACCP) framework system for monitoring the entire food system and demonstrate adequate skills towards its appropriate application in a food safety plan in a commercial hospitality organization.	✓			✓	✓			✓	✓	✓		
CO5:Display comprehensions towards concepts of natural and chemical preservation methods, nutrition saving techniques, storage mechanisms, waste disposal management, andPest Control techniques, etc. in order to ensure quality in food items.	✓		✓	✓	✓	✓		✓	✓	✓	✓	

Table 232: Mapping between COs of BC3IMI and POs

BC3IMI:Introduction to Management Concepts – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the well-established concepts of management, principles, as well as their evolution scenarios over the years, and demonstrate adequate skills to use them ethically while taking business decisions.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
CO2:Apprehend and exhibit skills towards managing the business environment by utilizing the managerial functions of planning, organizing, staffing, coordination, and controlling in effective and efficient manners.	✓	✓	✓	✓	✓	✓		✓		✓	✓	
CO3:Familiarize and develop skills towards the management techniques in an ethical manner.				✓	✓			✓		✓		
CO4:Have thorough knowledge regarding the dynamics of global business environment and develop abilities towards identifying the strengths and weaknesses of the individual businesses as well as the opportunities and threats prevailing in markets.		✓	✓	✓	✓			✓		✓	✓	

Table 233: Mapping between COs of BC3AFI and POs

BC3AFI:Hospitality Accounting & Finance – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the accepted accounting principles, define them appropriately, and use them proficiently towards taking various business decisions etc.	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO2:Apprehend the concept of financial statements and show affinities towards preparation of various financial statements like balance sheet, income statement, cash flow statement, etc. which would help towards business decision making processes.				✓	✓	✓	✓	✓	✓	✓		✓
CO3:Familiarize and develop skills towards the inventory management techniques.		✓	✓	✓	✓		✓	✓	✓			
CO4:Have thorough knowledge regarding the strategic decision making process from financial perspectives like financing, investment and dividend decisions, cost of capital, working capital, short term and long term sources of finance for hotels and restaurants etc.		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓

Table 234: Mapping between COs of BC3STII and POs

BC3STII:8 Weeks Industrial Training												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Harmonize between theoretical concepts and practical implications in a better manner.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Gain professional knowledge andexhibit appropriate skills in handling various kitchen operations.	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO3:Understand the importance and demonstrate the essential industry traits like devotion, honesty, integrity, curiosity, hard-work, and tireless attitude etc.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Apprehend and exhibit the critical thinking and problem solving skills towards real world situations.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:Appreciate their own core competencies that will guide them towards possessing impactful leadership and professional skills.	✓	✓	✓	✓	✓	✓		✓		✓	✓	
CO6:Develop awareness and respectful attitudes towards working in a multi-dimensional and multi-cultural environment.	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	

Table 235: Mapping between COs of BC4LSI and POs

BC4LSI:Larder and Short order Cookery – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Appreciate about the larder kitchen operations along with its importance, layout, hierarchy, duties and responsibilities of personnel, common ingredients used etc. and exhibit skills towards their management aspects.	✓	✓	✓	✓	✓	✓	✓		✓		✓	
CO2:Gain detailed comprehensions towards Larder and Garde manger products including marinated, force meat and gelatin based products and demonstrate adequate skills towards their proficient operations and management.	✓	✓	✓		✓			✓	✓		✓	
CO3:Understand and appreciate the detailed operational aspects of larder section by effective management of larder control cycles, garde manger operations along with efficient handling of various forms, formats, planning and execution functions.	✓	✓	✓	✓	✓	✓	✓	✓				
CO4:Apprehendand exhibit skills towards the concept of food presentations in commercial operations including the roles of garnishes and accompaniments, edible and non-edible displays, principles of presentations etc.	✓	✓	✓	✓	✓			✓	✓	✓		

Table 236: Mapping between COs of BC4LSII and POs

BC4LSII:Larder and Short order Cookery – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain professional knowledge towards larder kitchen operations along with familiarization of layouts, designs, tools, equipment, key ingredients, preparation procedures etc. and exhibit adequate skills towards preparations of varieties of larder products like marinated, force meat, gelatin based products etc.	✓	✓	✓		✓				✓			
CO2:Understand the details of accompaniments, garnishes, their functions, usages in commercial kitchen operations and show proficiencies towards their effective utilizations while presenting the finished products.	✓	✓	✓	✓	✓			✓	✓	✓		
CO3:Appreciate the art of carving and demonstrate appropriate skills towards preparations of various edible and non-edible displays along with vegetables, fruits and ice carving processes.	✓	✓	✓	✓	✓			✓	✓			
CO4:Apprehend the importance of Hors d' oeuvre, Appetizer, salad, entree etc. and show affinities towards their preparations.	✓	✓	✓	✓	✓			✓	✓	✓	✓	



Table 237: Mapping between COs of BC4MCI and POs

BC4MCI:Culinary Math & Control System - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1: Appreciate about the financial control in catering establishments and exhibit skills towards the apprehensions of various elements of costs such as food costs, labor costs, overhead costs, etc. and application of various strategies towards their control aspects.		✓			✓		✓	✓	✓			
CO2: Understand the details of purchasing mechanisms and demonstrate skills towards their effective management through defining the objectives, familiarization with purchasing procedures and methods, supplier ratings, yield management processes, requisition and order processing as well as centralized and decentralized purchasing functions.		✓		✓	✓	✓	✓	✓	✓			
CO3: Gain detailed comprehensions towards store management mechanisms and show affinities towards its methods, classification of materials, maintenance of par stocks, computerized record keeping, methods of stock valuation, Continuous / perpetual stock taking, annual stock taking, stores issues procedure, consumption record keeping etc.		✓		✓	✓	✓	✓	✓	✓			
CO4: Apprehend and exhibit skills towards the concepts of costs dynamics and management including causes of food spoilages, food cost percentage, production planning, pricing of menus, kitchen profit calculations etc.				✓	✓	✓	✓	✓	✓			

Table 238: Mapping between COs of BC4MFI and POs

BC4MFI:Menu Development and Function Catering - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the details of the menu management mechanisms and show proficiencies towards identifying the various affecting factors, gauging the customer's expectations, appropriate pricing of the menu items, conducting market research, and preparation of various types of menu as desired.	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
CO2:Gain thorough knowledge and demonstrate affinities towards management of the sequence of sales while adhering to the rules, regulations, standards, and best practices of food service industry.	✓	✓	✓	✓	✓	✓		✓	✓	✓		
CO3:Apprehend and exhibit adequate skills towards planning, organization, and management of various types of banqueting functions within commercial hospitality operations.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	
CO4:Appreciate the risks associated with arrangement of banqueting functions and successfully work towards their management by preparation and adaptations of contingency plans and work procedures.	✓			✓	✓	✓	✓	✓	✓			

Table 239: Mapping between COs of BC4HLI and POs

BC4HLI:Hospitality Law – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:To appreciate and show appropriate skills towards the basic contract act applicable on the host and guest relationships which forms the foundation of the hospitality operations including receiving the guests, obligations to protect them as well as the liability in case of loss of their valuables etc.		✓		✓	✓	✓		✓		✓		
CO2:To understand the core concepts and exhibit skills towards the formation and operation of hospitality businesses that will help them in extending their legal reasoning capabilities towards both legal and ethical practices.		✓	✓	✓	✓	✓		✓		✓		
CO3:Apprehend the details of risk assessment and management in hospitality business operations and demonstrate skills towards handling the unfavorable situations.		✓	✓	✓	✓	✓		✓				
CO4:Gain knowledge towards the rights and liabilities of food and beverage operators and skills towards operating the related businesses successfully while coping with the legal requirements.	✓	✓	✓	✓	✓							
CO5:To appreciate the contemporary and emerging issues of quality control, and be able in managing the multicultural workforce as well as dealing with various licenses and permits required for the business operations.	✓	✓	✓	✓	✓			✓			✓	✓

Table 240: Mapping between COs of BC4SCI and POs

BC4SCI: Safety and Security in catering establishments – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1: Appreciate the ethical, legal, and regulatory procedures and show proficiencies towards the application of the legislative requirements, standard operating procedures, and best practices in a variety of emergency situations.		✓	✓	✓	✓	✓		✓	✓	✓		✓
CO2: Gain thorough knowledge and apply the risk management principles to anticipate, identify, evaluate and control physical, chemical, biological and psychosocial hazards in hospitality avenues.	✓	✓	✓	✓	✓		✓	✓	✓	✓		
CO3: Understand and demonstrate affinities towards collecting, managing, and interpreting data and information towards identifying the existing and emerging safety and security issues at the business environments.		✓	✓	✓	✓	✓	✓	✓	✓			
CO4: Apprehend the project management techniques and use them effectively towards design, implement, support, and evaluate safety programs for commercial organizations.		✓		✓	✓		✓	✓	✓			

Table 241: Mapping between COs of BC4ACI and POs

BC4ACI:Advance Cookery - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Apprehend the details of kitchen layouts and designing aspects and show proficiencies in identification, planning, and assessment of their principles, management, store operations, supplier selections, production control, new products development and use of technologies in kitchen operations etc.	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
CO2:Appreciate and show practical affinities towards the management of banqueting operations including their principles, classifications, detailed processes, planning and implementations, limitations, precautions etc.	✓	✓	✓	✓	✓	✓			✓		✓	
CO3:Familiarize themselves with the concepts of centralized food production system along with their purposes, principles, operational mechanisms, storing, transportation and distribution aspects.	✓	✓	✓	✓	✓	✓	✓		✓			
CO4:Gain detailed knowledge and demonstrate skills towards organizing and managing various types of food promotional events such as food festivals, trade shows, exhibitions, food promotion programs on various occasions like Christmas, New year etc..				✓	✓	✓		✓	✓	✓	✓	

Table 242: Mapping between COs of BC4ACII and POs

BC4ACII:Advance Cookery - Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain professional knowledge towards various fusion cuisines along with preparation of various low-calorie menus from both Indian and International origins and demonstrate proficiencies towards planning, preparations, and demonstrations of the same.	✓		✓	✓	✓		✓	✓	✓		✓	
CO2:Understand the details of short order cookery and exhibit skills towards their preparations in commercial operations.	✓		✓	✓	✓				✓			
CO3:Appreciate the art of sandwiches preparations and showcase proficiencies in preparations and demonstrations of various types of sandwiches from vivid origins.	✓			✓	✓	✓	✓	✓	✓		✓	
CO4:Apprehend and show affinities towards line cooking mechanism for preparation of the Ala carte orders and Gueridon based products.	✓		✓	✓	✓				✓			

Table 243: Mapping between COs of BC4BCI and POs

BC4BCI:Bakery & Confectionary – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Apprehend the details of dessert preparations and show affinities towards the concepts of garnishing, plate presentations, sauce pouring techniques, buffet presentations as well as demonstrate proficiencies towards the modern trends in presentations	✓	✓	✓	✓	✓				✓		✓	
CO2:Understand and exhibit adequate skills in planning, preparations and demonstrations of various types of cooked, uncooked sugar displays as well as preparations of various types of candies and toffees.	✓	✓	✓	✓	✓	✓			✓		✓	
CO3:Appreciate and show practical affinities towards the bread arts consisting of bread sculptures, center pieces, bread basket preparations, etc.	✓			✓	✓	✓	✓	✓	✓			
CO4:Familiarize themselves with the detailed bakery and confectionary management processes such as planning, layouts, design, specialty tools, equipment, operations planning and executions, calculations of yield management, as well as assurance of quality in operational prospective.	✓			✓	✓	✓	✓	✓	✓	✓		

Table 244: Mapping between COs of BC4BCII and POs

BC4BCII:Bakery & Confectionary – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain professional knowledge towards various types of desserts along with demonstration of adequate proficiencies towards their planning, preparations, and demonstrations along with the arts of garnishing, sauce pouring techniques, buffet and plate presentations.	✓	✓	✓	✓	✓				✓			
CO2:Understand the details of sugar arts and gain proficiencies towards various cooked and non-cooked sugar displays for commercial operations.	✓			✓	✓	✓		✓	✓		✓	
CO3:Appreciate the art of toffee and candy making and exhibit the desired skills towards their effective preparations.	✓		✓	✓	✓			✓	✓			
CO4:Apprehend and show affinities towards various types of bread presentations such as center pieces, bread sculptures, and bread baskets etc.	✓	✓	✓	✓	✓				✓			



Table 245: Mapping between COs of BC4RBI and POs

BC4RBI:Restaurant & Bar Management –Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Apprehend the details of restaurant management including their layouts, designs, staffing, allocation and management of duties and responsibilities, handling financial details etc. and exhibit adequate proficiencies towards their effective operations.	✓		✓	✓	✓			✓	✓			
CO2:Gain professional knowledge towards the effective bar management aspects and demonstrate affiliations towards their effective and efficient management through layout planning, designing, preparations and serving mechanisms of various types of beverages, mixed drinks, cellar control and records, effective operations through requisitions, purchase, storing, issuing functions, handling of cash, coordination of sales and marketing efforts etc.	✓			✓	✓	✓		✓	✓			
CO3:Familiarize themselves with the latest trends, and emerging concepts in restaurant and bar management and exhibit appropriate skills towards their application in commercial hospitality operations.	✓	✓	✓	✓	✓						✓	✓

Table 246: Mapping between COs of BC4RBII and POs

BC4RBII:Restaurant & Bar Management –Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain professional knowledge towards flair bar tending with detailed shakers and bottle moves, types of pouring techniques, and art of accurate pouring and demonstrate adequate proficiencies towards their practical implications in bar operations.	✓			✓	✓	✓			✓			
CO2:Understand the details of forms, formats, and registers applicable in bars and restaurant operations and exhibit skills towards their appropriate usage in operations.	✓			✓	✓	✓	✓	✓	✓			
CO3:Familiarize themselves with the preparations of various contemporary and innovative mixed drinks and show proficiencies in preparations of various types of cock-tails and mock-tails.	✓			✓	✓	✓		✓	✓		✓	
CO4:Appreciate the aspects of accompaniments and garnishes and show affinities towards uses of various types of edible and non-edible garnishes in service operations.	✓				✓		✓	✓	✓		✓	

Table 247: Mapping between COs of BC5ITII and POs

BC5ITII:22 Weeks Industrial Training												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Harmonize between theoretical concepts and practical implications in a better manner.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Gain professional knowledge and exhibit appropriate skills in handling various hospitality operations.	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO3:Understand the importance and demonstrate the essential industry traits like devotion, honesty, integrity, curiosity, hard-work, and tireless attitude etc.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Apprehend and exhibit the critical thinking and problem solving skills towards real world situations.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:Appreciate their own core competencies that will guide them towards possessing impactful leadership and professional skills.	✓	✓	✓	✓	✓	✓		✓		✓	✓	
CO6:Develop awareness and respectful attitudes towards working in a multi-dimensional and multi-cultural environment.	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	

Table 248: Mapping between COs of BC6ESI and POs

BC6ESI:Environmental Science – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Appreciate details about the natural environment as a system and exhibit skills towards analyzing its effects on business operations.		✓	✓	✓	✓			✓		✓		✓
CO2:Understand and demonstrate skills to synthesize and manage the natural and man-made environment in order to ensure harmony and achieve eco friendliness in operations.		✓	✓	✓	✓			✓		✓		✓
CO3:Apprehend and exhibit skills towards understanding and preparation of the environmental management systems employed in modern day hospitality businesses.				✓	✓	✓		✓	✓	✓		
CO4:Gain knowledge towards the best and innovative practices involved in hotel businesses and demonstrate skills towards environment management, energy management, water conservation, waste management, pollution control, and safe guarding the premises etc.		✓	✓	✓	✓	✓		✓	✓			
CO5:Appreciate the use of alternative energy sources used for hotel operations and know the traits for applying them in businesses.		✓	✓	✓	✓				✓			

Table 249: Mapping between COs of BC6EHI and POs

BC6EHI:Entrepreneurship in Hospitality – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Appreciate details about the concept of entrepreneurship, its effects on economy and society, benefits, challenges involved and should be able to analyze the business environment in order to identify the micro and macro factors affecting its operations.	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓
CO2:Apprehend and exhibit the essential and desired entrepreneurship traits like patience, hard-work, perseverance, critical thinking, honesty, integrity and ethical behavior etc.	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓
CO3:Gain knowledge towards the strategic management issues for handling human resources, innovation, production, finance, distribution, sales and marketing, after sales services, customer relationship management and demonstrate skills towards their practical implications.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO4:Appreciate the use of networking and information handling in the business operations and exhibit skills towards their proper utilizations.	✓	✓	✓	✓	✓			✓				

Table 250: Mapping between COs of BC6OHI and POs

BC6OHI:OB & Human Resource Management – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:To appreciate the details and exhibit skills towards understanding and responding towards the behaviors of individual and groups of people associated with the business operations.		✓	✓	✓	✓	✓		✓		✓	✓	
CO2:Understand and demonstrate skills towards applying various motivational theories, leadership styles as well as the grievance handling mechanisms that come across the day to day business operations.		✓	✓	✓	✓	✓		✓		✓	✓	
CO3:Apprehend and use the various human resource management functions like human resource planning, recruitment, selection, training and development, performance appraisal, promotion, transfer, exit etc. in order to manage the workforce and ensure best performance from them towards achieving the business goals.		✓	✓	✓	✓			✓		✓	✓	
CO4:Gain advanced knowledge towards organizational cultures, changes, and demonstrate appropriate skills towards application of various strategies to manage them effectively.		✓	✓	✓	✓			✓		✓	✓	✓

Table 251: Mapping between COs of BC6HMI and POs

BC6HMI:Hospitality Marketing – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:To appreciate and demonstrate conceptual knowledge towards the marketing function by understanding the business environment and various factors affecting the functions of a business.			✓	✓	✓			✓	✓	✓	✓	✓
CO2:To understand and exhibit the desired level of intellect towards applying the various tools of marketing towards creating and satisfying the demand in the market place.			✓	✓	✓	✓	✓	✓	✓			
CO3:Recognize the social and ethical implications of consumer behavior and apply the appropriate techniques towards generating market solutions.			✓	✓	✓	✓		✓		✓	✓	
CO4:Apprehend the importance of strategies and showcase the skills to apply them in the marketing function in order to attract, manage, satisfy, and retain the customers to achieve customer lifetime values.			✓	✓	✓	✓		✓	✓	✓		
CO5:Familiarize themselves with the concepts of services marketing in general and tourism products in particular and be able to apply contemporary and innovative strategies to achieve sustainable competitive advantages for the business.		✓	✓	✓	✓			✓				

Table 252: Mapping between COs of BC6PSI and POs

BC6PSI:Personality Development with Soft Skills – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain thorough knowledge towards the managerial correspondence and demonstrate proficiencies towards their appropriate applications through various modes of inquiries, circulars, quotations, orders, acknowledgments executions, complaints, claims and adjustments, memos, minutes, circulars and notices, reports, etc.			✓	✓	✓	✓		✓	✓	✓	✓	✓
CO2:Master the art of conducting and giving interviews through gaining detailed understandings towards resume/CV/bio-data preparations, writing of covering letters, letter of reference, gaining knowledge towards types of interviews, video conferencing mechanisms, grooming standards, dress codes, etiquettes, etc.					✓	✓		✓	✓	✓		
CO3:Aware regarding the sense of self and nurture a deep understandings of personal motivations and professional responsibilities towards maintaining a positive as well as practical and ethical attitude and handle difficult situations with elegance, sophistications, and professionalism.			✓	✓	✓	✓		✓	✓	✓	✓	✓
CO4:Sensitize and groom themselves with the core aspects of social and business etiquettes as per the corporate, national, and international protocols, as well as exhibit good mannerisms and behavioral skills in order to get success in both conducting and appearing in both formal and informal circumstances.		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓



Table 253: Mapping between COs of BC6GSI and POs

BC6GSI:Advanced Gastronomy Studies - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain thorough knowledge towards the history and evolution of global gastronomic practices and exhibit adequate skills towards the appreciation of various factors affecting the food choices of people, religion and community effects, contributions of tribes towards the food consumption preferences, and various gastronomic models.	✓	✓	✓	✓	✓			✓	✓		✓	✓
CO2:Familiarize themselves with the latest trends in the field of gastronomy and demonstrate affinities towards the changing consumers, the psychology of the food shoppers, environmental influences in food purchase, ethical practices in food businesses, food quality, mapping the consumer’s expectations, genetically modified foods, organic foods, molecular gastronomy, newer food processing and packaging technologies, newer sources of ingredients etc.	✓	✓	✓	✓	✓			✓	✓	✓	✓	
CO3:Understand the International fine dining specialty foods and show affinities towards their planning, preparations, and demonstrations in commercial kitchens.	✓	✓	✓	✓	✓	✓		✓	✓		✓	
CO4:Apprehend the details of food journalism and photography and demonstrate adequate skills towards their effective operations in business practices.			✓	✓	✓	✓	✓	✓	✓	✓	✓	

Table 254: Mapping between COs of BC6GSII and POs

BC6GSII:Advanced Gastronomy Studies – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and exhibit professional skills towards the planning, preparations, and demonstrations of various international cuisines from regions of Korea, Middle East, USA, Caribbean, Creole, Russia.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Gain thorough knowledge towards the international specialty cuisines and exhibit proficiencies towards planning, preparations, and demonstrations of various horsd'oeuvres, English breakfasts, brunch menus, cold cuts, fast foods, kosher foods from across the globe.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:Appreciate and demonstrate detailed affinities towards various types of plate presentations using the contemporary and fusion menus.	✓	✓	✓	✓	✓	✓			✓			
CO4:Apprehend the details of molecular gastronomy and show competencies towards their planning, preparations and presentations by recognizing their social, technical and artistic domains.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 255: Mapping between COs of BC6BCI and POs

BC6BCI:Advanced Bakery & Confectionary – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain thorough knowledge towards the cocoa products, their history, origins, evolutions, classification, and usages in bakery as well as confectionary operations and exhibit adequate skills towards the planning, preparations and demonstrations of various cocoa based products in commercial kitchens.	✓	✓	✓	✓	✓				✓		✓	
CO2:Familiarize themselves with the concepts of chocolates and candies while appreciating their history, origins, evolutions, classification, and preparation methods.	✓	✓	✓	✓	✓				✓		✓	
CO3:Appreciate the concept of ice-creams, their history, origins, evolutions, classification, and usages and demonstrate proficiencies towards their planning, preparations and demonstration through commercial operations.	✓	✓	✓	✓	✓				✓			
CO4:Understand the details of Indian confectionaries and show affinities towards their planning, preparations, and demonstrations through kitchen operations.	✓	✓	✓	✓	✓	✓		✓	✓			

Table 256: Mapping between COs of BC6BCII and POs

BC6BCII:Advanced Bakery & Confectionary – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and exhibit professional skills towards the planning, preparations and demonstrations of various types of ice cream based upon vanilla, strawberry, chocolate, pineapple, mango, sorbets, bombe, sundae, parfaits etc.	✓	✓			✓			✓	✓		✓	
CO2:Gain thorough knowledge towards the concepts of chocolates, toffees, and candies and exhibit proficiencies towards planning, preparations, and demonstrations of various types of chocolates, candies, toffees, pastries, cakes etc.	✓	✓		✓	✓			✓	✓		✓	
CO3:Appreciate and demonstrate detailed affinities towards various types of Indian confectionaries based upon Chenna, Khoya, Flour, Milk, and Nuts.	✓	✓		✓	✓	✓		✓	✓		✓	
CO4:Apprehend the details of fusion cuisines in bakery operations and show competencies in planning, preparations and presentations of varieties of items.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Table 257: Mapping between COs of BC6EMI and POs

BC6EMI:Events Management – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain thorough knowledge towards the business of events and demonstrate adequate skills towards their planning, organizations, implementation, and evaluation functions in commercial settings.	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO2:Acknowledge the difference between varieties of events such as meetings, incentives tours, conferences, and exhibitions and exhibit proficiencies towards their successful organizations and management in practical perspectives.	✓	✓	✓	✓	✓	✓		✓	✓			
CO3:Familiarize themselves with the concepts of program evaluation and review techniques, critical paths, work breakdown structures, risk assessment, risk mitigation, and contingency planning and effectively use them while organization of various events.		✓	✓	✓	✓		✓	✓	✓			✓
CO4:Apprehend the financial perspectives towards events management and demonstrate adequate skills in their operational management through budgeting, costing, and controlling functions.	✓	✓	✓	✓	✓	✓	✓	✓	✓			

Table 258: Mapping between COs of BC6EMII and POs

BC6EMII:Events Management – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and exhibit professional skills towards the planning, preparations, organizations, and evaluations of various types of meetings, incentive tours, conventions / conferences and expositions / exhibitions.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO2:Gain thorough knowledge towards the concepts of event management techniques of program evaluation and review techniques, critical paths, work breakdown structures, risk assessment, risk mitigation, and contingency planning and effectively use them while organization of various events.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:Familiarize themselves with the detailed operational procedures involved in successful organization of varieties of event across the globe with suitable case studies.		✓	✓	✓	✓	✓			✓	✓	✓	
CO4:Appreciate and demonstrate detailed affinities towards practical based learning of preparing, motivating and effectively use multi disciplinary teams towards successful organizations of the events.		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓

### 3.4.3 Master of Business Administration in Hospitality Management

Table 259: Mapping between COs of MHM1IHMI and POs

MHM1IHMI:Introduction to Hospitality Management – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and exhibit necessary skills towards describing the basics of services sector,its origins, growth over the years, current status, future prospects, as well as the detailed classifications etc.	✓	✓	✓	✓	✓						✓	
CO2:Understand and demonstrate appropriate skills towards defining the allied sectors of the hospitality industry including the hotels along with their functioning.			✓	✓	✓						✓	
CO3:Appreciate themselves with various characteristics of the hospitality sector in order to identify and cultivate those unique features to manage the business operations.				✓	✓							
CO4:Acknowledge the existing and emerging issues in the hospitality industry and act towards mitigating them successfully in order to achieve sustainable competitive advantages.		✓		✓	✓					✓		

Table 260: Mapping between COs of MHM1TTCI and POs

MHM1TTCI:Travel and Tourism Concepts – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the basics of travel and tourism sector, origins, and evolutions, typology, factors affecting their operations as well as contribution towards the society and economy and exhibit their skills towards operating the related business ventures.	✓	✓			✓						✓	
CO2:Apprehend and illustrate the detailed structure of the tourism industry along with showing proficiencies in identifying operating various niche and alternative tourism avenues.					✓							
CO3:Appreciate and familiarize themselves with the system of tourism sector along with detailed deliberations towards various tourism organizations operating at the world stage.			✓		✓				✓			
CO4:Understand and demonstrate appropriate skills towards preparation and presentation of various travel documentations and formalities including the currency and customs regulations, special permits, licenses etc. in order to facilitate the business operations of the travel and tourism sector.					✓	✓			✓		✓	



Table 261: Mapping between COs of MHM1FBMI and POs

MHM1FBMI:Food & Beverage Management I – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the basics of cooking and baking techniques and demonstrate appropriate skills towards preparation and presentation of the basic items.	✓		✓	✓	✓				✓			
CO2:Apprehend the detailed departmental structure of the food production as well as food and beverage services departments along with showing proficiencies in the processes such as design, classification, allocation, and supervision etc. in order to enhance the work procedures in them.	✓	✓	✓	✓	✓	✓		✓	✓			
CO3:Appreciate and familiarize themselves with the food and beverage services management system along with their origins, evolutions, processes, tools, equipment, and techniques, their care and maintenance processes, types of services as well as the correct use of them in business settings.	✓	✓	✓	✓	✓				✓			
CO4:Acknowledge the detailed menu management process and exhibit adequate levels of skills towards menu planning, preparation, and presentation including Indian and international multi course menus and types of meals.	✓	✓		✓	✓	✓			✓			

Table 262: Mapping between COs of MHM1FBMII and POs

MHM1FBMII:Food & Beverage Management I – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate their skills in preparing the basics items of professional cookery like stocks, sauces, soups and salads etc.	✓		✓	✓	✓				✓			
CO2:Gain professional knowledge and exhibit skills towards the preparation of international menu comprising of three to four courses of cuisines.	✓		✓	✓	✓				✓		✓	
CO3:Acknowledge, identify, classify, and demonstrate skills regarding preparation of varieties of cuts and folds of vegetables, fish, meat items etc.	✓				✓				✓			
CO4:Appreciate and display the skills towards preparation of various bakery products like bread, pastry, cakes, hot/cold and Indian desserts etc.	✓				✓				✓			
CO5:Gain knowledge and show proficiencies in identifying, using, cleaning, and maintaining various types of tools, and equipment used, napkin folding procedures, as well as setting ups of the tables and covers in FandB service operations	✓		✓	✓	✓				✓			
CO6:Apprehend the importance of menu management and display the desired skills towards planning, preparation and presentation of Indian and international menu.	✓				✓	✓			✓		✓	

Table 263: Mapping between COs of MHM1RDMI and POs

MHM1RDMI:Rooms Division Management I – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the basics of front office department and exhibit skills towards the core operations of preparing organizational charts, allocating duties and responsibilities, supervising the personnel, performing guest duties as described in the guest cycle, and remain well versed with the forms, formats, tools and equipment used.	✓	✓	✓		✓	✓			✓			
CO2:Apprehend the detailed lobby and bell desk operational aspects and show proficiencies towards guest handling procedures including the grievance settlement and customer relationship functions.	✓			✓	✓	✓				✓		
CO3:Appreciate and familiarize them with the housekeeping activities performed in commercial business establishments and show acquaintance towards its organizational structure, duties and responsibilities of staffs, and coordination between housekeeping and other departments of the organization to ensure smooth operations.	✓				✓				✓			
CO4:Acknowledge and demonstrate the desired skills towards the maintenance and up-keepment of guest rooms including their typology, bed making and cleaning procedures, key handling mechanisms, identification and correct use of tools, equipment, and applications, maintenance of supplies and amenities, etc.	✓				✓				✓	✓		

Table 264: Mapping between COs of MHM1RDMII and POs

MHM1RDMII:Rooms Division Management I – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain detailed knowledge and show affinities towards the growth, evolution, classifications, departmental hierarchies, duties and responsibilities, processes, existing and emerging concepts both in front office and housekeeping domains.	✓		✓	✓	✓	✓			✓	✓	✓	
CO2:Understand and demonstrate their skills in guest acquisition, receiving, and serving techniques in order to achieve ultimate customer satisfaction.	✓				✓	✓			✓		✓	
CO3:Gain professional knowledge and exhibit skills towards the front office operations including the detailed processes and use of appropriate tools, equipment, forms, formats, registers, and applications.					✓	✓			✓			
CO4:Acknowledge, identify, classify, and demonstrate skills regarding the operations of varieties of tools, equipment, cleaning agents used in house-keeping processes.					✓				✓			
CO5:Appreciate and display the skills towards maintenance and up-keepment of the guest rooms and public areas in commercial hospitality properties.				✓	✓					✓		
CO6:Gain knowledge and show proficiencies in cleaning, caring, and maintaining various types of room supplies, and amenities including processes of bed making, napkin folding, check-in and checkout procedures etc.					✓		✓					

Table 265: Mapping between COs of MHMPPMI and POs

MHMPPMI:Principles & Practices of Management – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the proven management theories, their origins, evolutions, detailed mechanisms, and effects on businesses and apply them productively in day to day decision making processes.	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓
CO2:Apprehend the various key components of management function such as planning, organizing, staffing, coordinating and communication and exhibit proficiency in using them towards assessing the business environment and serving the customers ethically and efficiently.	✓	✓	✓	✓	✓	✓		✓		✓	✓	
CO3:Appreciate and familiarize the concepts of direction, leadership, and motivations and competently apply their principles in identifying and managing business operations at a global scale.			✓					✓		✓		
CO4:Acknowledge and demonstrate the desired skills towards the management of people, processes, and resources in order to gain sustainable competitive advantages for the businesses.	✓		✓		✓							

Table 266: Mapping between COs of MHM1AFI and POs

MHM1AFI:Accounting & Finance – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the proven accounting propositions, their detailed mechanisms, and proficiently apply them in day to day decision making processes.	✓			✓	✓		✓	✓				
CO2:Apprehend the various financial statements along with their functions and exhibit skills towards using balance sheet, income statement, cash flow statement, etc. towards assessing the business environment and take appropriate decisions.	✓			✓	✓		✓	✓				
CO3:Appreciate and familiarize the concepts of financial management like resource allocation, capital budgeting, investment project proposals etc. towards facilitating effective business operations.	✓			✓	✓		✓	✓				
CO4:Acknowledge and demonstrate the desired skills towards the management of financing, investment, and dividend decisions such as cost of capital, working capital, short term and long term sources of finance etc. that will help in strategic decision making process.	✓		✓	✓	✓		✓	✓				

Table 267: Mapping between COs of MHM2FBMI and POs

MHM2FBMI:Food & Beverage Management II – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the concepts of kitchen management, and demonstrate appropriate skills towards kitchen layout and designing, supplies handling mechanisms, storing, production management processes, proper use, care and maintenance of tools, equipment, raw materials, work scheduling, supervising and garbage disposal etc.	✓			✓	✓				✓			
CO2:Appreciate different regional Indian cuisine along with their history, heritage, geographical affinities, key ingredients, equipment and utensils used, and special delicacies and demonstrate their preparations.	✓			✓	✓				✓			
CO3:Apprehend the concept of centralized food production system and familiarize themselves with their potent operations in commercial kitchen settings.	✓	✓		✓	✓				✓			
CO4:Gain knowledge towards the bar and beverage management processes and exhibit adequate levels of skills towards defining various types of beverages, their manufacturing/distillation processes, classification, and serving techniques etc. along with identification of various tools and equipment used in bar operations, their layout, design, staffing, work allocation, supervision, costing, stock maintenance, and control aspects.	✓	✓		✓	✓	✓			✓			

Table 268: Mapping between COs of MHM2FBMII and POs

MHM2FBMII:Food & Beverage Management II – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate their skills in planning, preparing, and presenting 3 to 4 courses of various regional Indian cuisines from Andhra Pradesh, West Bengal, Gujarat, Kashmir, Odisha and Rajasthan etc. while apprehending their history, heritage, culture, geographical affinities, tools, equipment, ingredients, and techniques used, along with the special delicacies.	✓		✓	✓	✓			✓	✓			
CO2:Gain professional knowledge and exhibit skills towards the preparation of various low calorie menus involving both Indian and western cuisines for all types of occasions.	✓		✓	✓	✓			✓	✓			
CO3:Acknowledge, identify, classify, and demonstrate skills regarding preparation of varieties of fast food items from both Indian and Western origins.	✓		✓		✓				✓			
CO4:Gain knowledge and show proficiencies in bar and beverage operations like cover laying, order processing, and serving the customers.	✓		✓	✓								
CO5:Appreciate and display the skills towards preparation of various contemporary and innovative cock-tails and mock-tails used at different commercial hospitality avenues.	✓				✓				✓			



Table 269: Mapping between COs of MHM2RDMI and POs

MHM2RDMI:Rooms Division Management II – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the details of guest reservation processes and show affinities towards its operations including handling enquiries over letters, telephones, faxes, mails, record keeping activities, group and VIP reservations, operating various software applications used in reservation processes etc.	✓		✓		✓	✓			✓			
CO2:Appreciate different forms, formats, registers, applications, and technologies used in front office department and demonstrate skills towards operating them successfully.					✓	✓			✓			
CO3:Apprehend with the concepts of registration processes as specified for Indian, foreigners, walk-ins, guests with reservation, group travelers, crews, transient passengers, scanty baggage guests, etc. and familiarize themselves with various registration terminologies.	✓				✓	✓			✓	✓	✓	
CO4:Gain knowledge and demonstrate skills towards the housekeeping control desk operations including handling of calls, paging systems and methods, emergency situations handling, briefing and de-briefing staffs, controlling and coordinating activities, indenting and purchasing systems, key handling operations etc.	✓		✓		✓							
CO5:Appreciate the role, importance, varieties of fibers and fabrics used in the commercial hospitality operations and exhibit proficiencies towards their indenting, purchase, storing, care, maintenance, replenishments, procedures, correct usage, care, and maintenance of various tools, and equipment used in the housekeeping operations, the functioning of laundry, the process of flower arrangement etc.	✓		✓		✓				✓			

Table 270: Mapping between COs of MHM2RDMII and POs

MHM2RDMII:Rooms Division Management II – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate their skills in planning, preparing, reserving, registering, and handling various types of guests visiting the commercial hospitality businesses.	✓			✓	✓	✓		✓				
CO2:Show affinities towards handling various types of situations that may arise during day to day operations.						✓		✓			✓	
CO3:Gain professional knowledge and exhibit skills towards the housekeeping operations performed in public areas and guest rooms in a commercial hospitality business setting.	✓				✓				✓			
CO4:Acknowledge, identify, classify, and demonstrate skills regarding the correct usage of various tools, equipment, cleaning agents, fabrics, forms, formats, registers, technologies, applications, etc. used in both front office and housekeeping departments.	✓			✓					✓			

Table 271: Mapping between COs of MHM2MMI and POs

MHM2MMI:Marketing Management – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the concept of products and services sectors and demonstrate adequate skills towards the successful implementations of marketing management phenomena in ensuring their successful operations.	✓	✓	✓	✓	✓	✓		✓	✓		✓	
CO2:Appreciate different marketing functions and exhibit propensity towards using them adequately in order to gain competitive advantages over the challengers at the market place.	✓	✓	✓	✓								
CO3:Apprehend the concept of marketing mix and strategically use them in order to achieve maximum customer satisfaction through ethical operations.	✓	✓	✓	✓								
CO4:Gain knowledge towards consumer behavior and demonstrate skills towards application of relevant strategies in order to gain both mind and wallet shares of the customers and retain them for a longer period of time for achieving consumer life time values.	✓	✓	✓	✓	✓					✓		
CO5:Familiarize themselves with the current and emerging issues at the domestic and international markets and successfully handle them for effective management of marketing operations.		✓			✓						✓	

Table 272: Mapping between COs of MHM2THTI and POs

MHM2THTI:Technology in Hospitality & Tourism – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the concepts of information acquisition and processing, use of computers, and technologies and demonstrate adequate skills towards their successful operations in modern day business	✓				✓				✓			
CO2:Appreciate and exhibit adequate skills towards operating various ICT based applications specifically used in hospitality and tourism industry.	✓	✓							✓			
CO3:Apprehend the concept of management information systems and showcase their abilities to use it in business decision making processes.				✓	✓			✓	✓	✓		
CO4:Gain knowledge towards various e-commerce and technology based business models and successfully apply them in hospitality and tourism business operations.					✓		✓		✓	✓		

Table 273: Mapping between COs of MHM2TADI and POs

MHM2TADI:Talent Acquisition and Development – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the concepts of organizational behaviors and show affinities towards understanding the individual and group behaviors of employees in order to ensure their successful utilization in modern day business operations.		✓	✓	✓	✓	✓		✓		✓	✓	✓
CO2:Appreciate the concepts of impression management, interpersonal perception, emotional intelligence, work-life balance, stress management, organizational climates, change management etc. and exhibit adequate skills towards operating successful business ventures through appropriate use of those concepts.	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO3:Apprehend the concept of human resource management and successfully implement its various functions such as human resource planning, recruitment, selection, training, development, performance appraisal, promotion, transfer, and exit management etc. in modern day businesses settings.	✓		✓	✓	✓	✓	✓	✓		✓	✓	
CO4:Gain knowledge towards the concepts of employee motivation, development, monitoring and evaluation and apply various man-management strategies towards ensuring successful operations in various hospitality and tourism business avenues.				✓	✓			✓		✓	✓	

Table 274: Mapping between COs of MHM2CSI and POs

MHM2CSI:Communication Skills – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the concepts of communication and show affinities towards their types, processes, usages, for effectively running and operating modern day businesses.	✓		✓	✓	✓	✓			✓			
CO2:Appreciate the concepts of oral communication and exhibit adequate skills towards using correct words, pronunciations, adjectives, expressions, tone, etiquette and manners etc. towards effective communication.	✓		✓		✓	✓			✓	✓		
CO3:Apprehend the importance of written communication and demonstrate suitable skills towards drafting various correspondence such as letters, memos, notices, revisions, responses, remarks, apologies, effectively and efficiently.	✓		✓		✓	✓			✓	✓		
CO4:Gain knowledge towards the presentation skills desired for personality development and projection and successfully apply them in business settings.	✓		✓		✓	✓			✓	✓		

Table 275: Mapping between COs of MHM3AFBMI and POs

MHM3AFBMI:Advanced Food and Beverage Management – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the concept of larder kitchen, layout, design, tools and equipment used, ingredients, produced cuisines and detailed operations and demonstrate adequate skills towards their ethical and professional utilization in commercial business settings.	✓		✓		✓				✓			
CO2:Appreciate the different items of larder kitchens such as marinated products, force meat products, gelatin products, Cold Meat Platter, Centre Pieces etc. and show proficiencies towards their appropriate planning, preparations and presentations.	✓		✓		✓				✓			
CO3:Apprehend the detailed knowledge towards international cuisines and exhibit adequate skills towards the planning, preparations and presentations of various international dishes from British, French, Italian, Mexican, Spain and Portugal, Oriental – Chinese, Thai cuisines while recognizing their history, heritage, geographical affinities, key ingredients, equipment and utensils used, and special delicacies	✓		✓		✓				✓		✓	
CO4:Gain knowledge towards the use of various herbs, wines, spirits, and concepts of accompaniments, garnishes, edible, non-edible, and artistic food displays etc. and apply them in commercial kitchen operations.	✓				✓				✓			
CO5:Familiarize and practice various advanced food and beverage management concepts such as FandB control cycle, inventory and cost control, budgeting, and personnel management etc. towards ensuring successful business operations.	✓		✓		✓	✓			✓	✓		

Table 276: Mapping between COs of MHM3AFBMII and POs

MHM3AFBMII:Advanced Food and Beverage Management – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate their skills in planning, preparing, and presenting 3 to 4 courses of various International cuisines like British, French, Italian, Mexican, Spain and Portugal, Oriental –Chinese , Thai etc. while apprehending their history, heritage, culture, geographical affinities, tools, equipment, ingredients, and techniques used, along with the special delicacies.	✓		✓		✓				✓		✓	
CO2:Gain professional knowledge and exhibit skills towards the preparation of various larder based products such as marinated products, forcemeat products, Chaud-froid products, cold meat platters, centerpieces, etc.	✓				✓				✓		✓	
CO3:Acknowledge, identify, classify, and demonstrate skills regarding preparation of varieties of Salads, Canapés and Sandwiches etc.	✓		✓		✓				✓		✓	
CO4:Gain knowledge and show proficiencies towards advanced operations in food and beverage management concept such as requisition and purchasing functions, inventory control, budgeting, as well as familiarizing themselves with Gueridon trolley operations and services.	✓				✓	✓	✓	✓	✓	✓		
CO5:Appreciate and show appropriate skills towards Flambé services as well as various types of carving and display practices.					✓				✓			



Table 277: Mapping between COs of MHM3ARDMI and POs

MHM3ARDMI:Advanced Rooms Division Management – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the details of yield management concepts and show proficiencies towards anticipating and apprehending consumer behaviors in order to maximize revenue in business operations.	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO2:Gain thorough knowledge in accommodation statistics calculation and analysis functions and exhibit adequate skills towards various pricing decisions in front office operations at commercial hospitality businesses.			✓	✓	✓		✓	✓	✓			
CO3:Appreciate and demonstrate the desired levels of skills in planning, organizing, purchasing, budgeting and controlling aspects of housekeeping operations in commercial settings.	✓				✓	✓	✓	✓	✓			
CO4:Apprehend and appropriately use the concepts and skills towards motivation, training, development, supervision and control of housekeeping personnel in order to ensure smooth operations in business.	✓				✓				✓			

Table 278: Mapping between COs of MHM3ARDMII and POs

MHM3ARDMII:Advanced Rooms Division Management – Practical												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and demonstrate advanced levels of skills towards preparing various types of tariff plans in front office as per the demand scenarios.	✓		✓		✓	✓						
CO2:Appreciate the consumer behavior concepts and demonstrate adequate skills in using yield management notions.	✓		✓			✓	✓	✓				
CO3:Show affinities towards handling various types of situations that may arise during day to day operations.	✓		✓			✓	✓			✓	✓	
CO4:Gain professional knowledge and exhibit skills towards planning, purchasing, storing, issuing, allocating, supervising, organizing, budgeting, controlling, and coordinating various housekeeping operations and elements.	✓					✓	✓		✓			
CO5:Gain detailed knowledge and show proficiencies towards laundry management operations as well as various design and renovation processes.	✓		✓		✓				✓			

Table 279: Mapping between COs of MHM3FSNI and POs

MHM3FSNI:Food Science and Nutrition – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the concept of nutrition, their importance, functions, and scope towards leading healthy lives and exhibit necessary skills towards proper adaptation of nutritious foods in commercial cookery activities.	✓	✓		✓	✓					✓		
CO2:Gain thorough knowledge regarding importance, functions, sources, and classifications details of nutrients like Carbohydrates, Fats, Proteins, and Vitamins etc. and exhibit adequate skills towards their usage in commercial cooking processes.	✓	✓		✓	✓			✓				
CO3:Appreciate and demonstrate the desired levels of skills towards the notions and management of BMR, SDA, health hazards associated with underweight and overweight scenarios, energy balancing in body, etc.	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO4:Familiarize themselves with the concepts of balanced diet and therapeutic foods as well as show affinities towards their critical evaluation, calculation of nutritive and use in menu planning activities while considering various age groups, gender, and health conditions etc.		✓			✓			✓				

Table 280: Mapping between COs of MHM3QMRMI and POs

MHM3QMRMI:Quantitative Methods and Research Methodology – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the concept of research, their objectives, types, processes, etc. and exhibit necessary skills towards identification, explanation, comparison, preparation, and presentation of research proposals.	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO2:Gain thorough knowledge regarding research methodologies, and demonstrate adequate skills while carrying out practical research projects in social science domain towards understanding of consumer behaviors.						✓	✓	✓	✓			
CO3:Appreciate and demonstrate the desired levels of skills towards performing various statistical calculations and operating applications using both manual and digital (Excel and SPSS packages) modes.	✓	✓				✓	✓	✓	✓			
CO4:Apprehend the concepts of report writing and presentations of analysis as well as appropriately use them in day to day business decision making process.	✓	✓	✓		✓	✓			✓			

Table 281: Mapping between COs of MHM3SSCMI and POs

MHM3SSCMI:Safety, Security and Crisis Management – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and diligently exhibit skills towards the concepts of safety and security in commercial travel, tourism, and hospitality establishments including their differentiations and classifications, emerging issues, incidents, and common procedures towards handling crisis situations in local, national and global contexts.	✓	✓	✓	✓	✓	✓		✓			✓	✓
CO2:Gain thorough knowledge regarding various natural and man-made disasters and demonstrate adequate skills while confronting them through practical strategies.	✓	✓	✓		✓			✓	✓		✓	✓
CO3:Appreciate and display the desired levels of skills towards preparing for and responding towards various types of crisis by analyzing best practices adopted in both Indian and International levels.	✓	✓	✓		✓	✓			✓		✓	✓
CO4:Apprehend the concepts of risk assessment and management through business area impact analysis, contingency planning, corporate crisis communication plans, media management, business continuity plans, etc. and appropriately use them appropriately in business operations.	✓				✓	✓	✓	✓	✓			

Table 282: Mapping between COs of MHM3SSI and POs

MHM3SSI:Soft Skills – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand and diligently exhibit skills towards the concepts of business correspondences including managerial writing such as letters, reports, inquiries, quotations, orders, acknowledgments, apologies, memos, minutes of the meetings, agenda, complaints, etc. using appropriate words, language, and etiquettes.			✓	✓	✓	✓		✓	✓			
CO2:Gain thorough knowledge on various interview techniques by mastering the art of interviews, dress code, body language, impression management, job application process, do's and don'ts in an interview, and demonstrate adequate skills towards both conducting and giving interviews through manual and digital modes.	✓		✓	✓	✓	✓			✓			
CO3:Appreciate and display the desired levels of skills towards personality development aspects such as gaining self-awareness, building confidence, self-esteem, having positive attitudes, building interpersonal trust etc.	✓		✓	✓	✓	✓						
CO4:Apprehend the concepts of social and business etiquettes and successfully implement them in business operations through proper utilization of right attitudinal and behavioral aspects.	✓		✓		✓	✓						

Table 283: Mapping between COs of MHM4ITII and POs

MHM4ITII:22 Weeks Industrial Training												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Harmonize between theoretical concepts and practical implications in a better manner.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Gain professional knowledge andexhibit appropriate skills in handling various hospitality operations.	✓		✓		✓			✓	✓			
CO3:Understand the importance and demonstrate the essential industry traits like devotion, honesty, integrity, curiosity, hard-work, and tireless attitude etc.			✓	✓				✓		✓	✓	✓
CO4:Apprehend and exhibit the critical thinking and problem solving skills towards real world situations.							✓	✓	✓			
CO5:Appreciate their own core competencies that will guide them towards possessing impactful leadership and professional skills.	✓	✓	✓	✓	✓							
CO6:Develop awareness and respectful attitudes towards working in a multi-dimensional and multi-cultural environment.										✓	✓	✓

Table 284: Mapping between COs of MHM5MICEMI and POs

MHM5MICEMI:MICE (Meeting, Incentives, Conventions, Exhibitions) Management - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the concept of MICE management and exhibit the key traits towards planning, designing, coordinating, staffing, allocating, directing, leading, monitoring, evaluating, sourcing products and services, and taking feedbacks etc. towards successful organization of various events.	✓	✓		✓	✓			✓			✓	
CO2:Gain thorough knowledge and demonstrate the desired skills towards synchronizing key concepts from business management, marketing management, human resource management, operations management, procurement, financial and risk management in order to arrange and manage successful professional events.	✓		✓	✓	✓	✓	✓	✓	✓			
CO3:Appreciate the importance of critical thinking and creative solutions and demonstrate the desired levels of skills towards arranging for and managing world class events.	✓			✓	✓		✓	✓				
CO4:Apprehend and appropriately communicate with all the key stakeholders in order to make the events successful.		✓		✓	✓					✓	✓	



Table 285: Mapping between COs of MHM5EDI and POs

MHM5EDI:Entrepreneurship Development – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Familiarize themselves with the environmental and ethical factors affecting the events and demonstrate sensitivity, standards, attitude, and responsibility towards them while organizing various events.	✓	✓	✓	✓	✓			✓		✓	✓	
CO2:Appreciate details about the concept of entrepreneurship, its effects on economy and society, benefits, challenges involves, barriers faced, and should be able to analyze the business environment in order to identify the micro and macro factors affecting its operations.					✓	✓	✓	✓	✓			
CO3:Understand and demonstrate appropriate skills to prepare viable business plans.					✓	✓		✓		✓	✓	✓
CO4:Apprehend and exhibit the essential and desired entrepreneurship traits like patience, hard-work, perseverance, critical thinking, honesty, integrity and ethical behavior etc.	✓	✓	✓	✓	✓							
CO5:Gain knowledge towards the strategic management issues for handling human resources, innovation, production, finance, distribution, sales and marketing, after sales services, customer relationship management and demonstrate skills towards their practical implications.			✓	✓	✓	✓	✓	✓	✓			

Table 286: Mapping between COs of MHM5BHLLI and POs

MHM5BHLLI:Business & Hospitality Law – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand details about the concept of Indian Contract Act, definition of core components, classifications, essentials of offer, acceptance, consideration, agreement, mistakes, misrepresentations, fraud, coercion, undue influence, their effects, breach of contract, etc. and exhibit appropriate skills towards implementing them in commercial hospitality operation for enhancing the guest-host relationships.	✓	✓	✓	✓	✓					✓		
CO2:Appreciate the legal responsibilities of managers in operating the business ventures through understanding, recognition, and demonstration of appropriate skills towards utilization of various hospitality regulations towards food, beverages, essential supplies, maintenance of quality and quantity while serving the customers, ensuring their safetyand security, establishing and managing business enterprises through different licenses and permits etc.	✓		✓	✓	✓							✓
CO3:Apprehend and exhibit the essential and desired skills towards planning, acquiring, developing and managing a competent work force through practical application of various industrial legislations etc.	✓	✓	✓	✓	✓			✓			✓	✓
CO4:Gain knowledge towards the various tourism legislations related to destinations, hospitality and catering, travel, tourist related laws etc. and demonstrate affinities towards using them ethically and responsibly while operating business ventures.	✓		✓	✓	✓					✓	✓	

Table 287: Mapping between COs of MHM5FSHI and POs

MHM5FSHI:Food Safety and Hygiene – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the concept of food safety and describe the various sources of intentional and incidental food contamination and their effects on human health as well as suggest various measures through which the food contamination can be prevented.	✓	✓		✓	✓					✓		
CO2:Gain thorough knowledge regarding the importance of public health and core objectives of food hygiene and demonstrate the desired skills towards facilitating maintenance of hygiene in various operations.		✓	✓	✓	✓					✓		✓
CO3:Appreciate the importance of quality control in procurement, storage, and uses of raw materials and finished products and exhibit affinities towards quality assurance in all types of ingredients and food items used in commercial hospitality businesses.				✓	✓					✓		✓
CO4:Apprehend and appropriately use the principles of Hazard Analysis Critical Control Points (HACCP) in business operations.	✓			✓	✓			✓				
CO5:Conduct risk assessment of various types of food and beverage items used in commercial hospitality avenues and successfully handle them through thorough knowledge and skills.	✓	✓	✓	✓	✓			✓				✓

Table 288: Mapping between COs of MHM5SOEI and POs

MHM5SOEI:Service Operations Excellence and Innovation – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Realize the importance of maintaining quality in products and service operations and demonstrate adequate skills towards quality improvement and management measures in the business processes.	✓	✓	✓	✓	✓			✓				✓
CO2:Gain thorough knowledge regarding the various principles of quality management and utilize them within the business operations by identification of various causes and their effects, benchmarking, costs of failures, and other contemporary mechanisms.	✓	✓	✓	✓	✓		✓	✓	✓			
CO3:Appreciate the key aspects of quality improvement cycle in organizational settings and show affinities towards selection and use of appropriate tools, equipment, and techniques towards their control, improvement, measure, evaluation and control stages.	✓	✓	✓	✓	✓		✓	✓	✓			
CO4:Apprehend and appropriately use the proven principles and strategies and demonstrate strong analytical skills towards assessing their costs of operations, challenges for successful implementations and mitigate any road blocks.	✓			✓	✓	✓	✓	✓	✓			
CO5:Understand the principles of lean manufacturing and show adequate skills towards managing its operations through supplier relationships, quality control and adaptation of latest technological advancements in business operations.	✓	✓	✓	✓	✓	✓			✓		✓	

Table 289: Mapping between COs of MHM5RMI and POs

MHM5RMI:Resort Management – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Realize the basic concept of resort industry and demonstrate adequate skills towards acknowledging their importance, characteristics, special features, operational aspects, current positions and future prospects. .	✓		✓	✓	✓						✓	✓
CO2:Appropriately use the proven principles and strategies towards successful resort operations by apprehending the conceptual and practical knowledge towards their planning, capitaland financial management, infrastructural development, facilities planning, guest relations activities, entertainment options, standard operating procedures, promotionand marketing efforts, budgeting, control and coordination scenarios, safety, security, cleanliness, hygiene, management of labour force issues.	✓	✓	✓	✓	✓					✓	✓	
CO3:Appreciate the core concepts of front-of-the-house, heart-of-the-house, and back-of-the-house operations and show proficiencies towards managing them effectively in resort setups.	✓		✓	✓	✓							
CO4:Understand the principles and demonstrate necessary skills towards summarizing the economic, social, environmental and technological considerations while planning, developing, and managing the resort properties.	✓			✓	✓	✓	✓	✓	✓	✓	✓	

Table 290: Mapping between COs of MHM5MRECI and POs

MHM5MRECI:Management of Restaurants and Entertainment Centers – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Realize the origins and significance of food and beverage businesses and demonstrate adequate skills towards understanding their contributions to the economy, benefits, risk factors involved, and detailed operational processes etc. in order to establish and/or run a venture successfully.	✓	✓	✓		✓							
CO2:Gain knowledge and proficiently exhibit skills towards establishment of a restaurant business including its organizational structures, typology, design- ing, layouts, staffing, opening and closing procedures, investment sources, specifications of tools, equipment, furniture, linen, crockery, cutlery, tech- nologies and applications needed etc.	✓	✓	✓	✓	✓				✓	✓	✓	
CO3:Understand the detailed concepts regarding entertainment management and familiarize themselves with its origins, evolutions, characteristics, clas- sification, typology, operational processes in order to plan, establish, and run them.	✓		✓	✓	✓	✓	✓	✓				
CO4:Apprehend various case studies of successful entertainment avenues such as Walt Disney, Noah Ark park, Essel world, Aquatica, Wonderla, Ramoji film City etc. in order to gain detailed understandings towards their planning, financial management, infrastructural development, facilities plan- ning, guest relations activities, entertainment options, standard operating pro- cedures, promotion and marketing efforts, budgeting, control and coordina- tion scenarios, safety, security, cleanliness, hygiene, management of labour force issues and apply them in real life situations.	✓	✓	✓	✓	✓					✓	✓	✓

Table 291: Mapping between COs of MHM5BOMI and POs

MHM5BOMI:Banquet Operations Management – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Realize the step by step approach for arrangement of banquets including handling of enquiries, booking procedures, negotiations, handling objections etc. and demonstrate necessary skills towards adopting them in practice while designing, planning, executing, and evaluating various banqueting functions.	✓		✓		✓	✓	✓	✓	✓		✓	
CO2:Gain thorough knowledge and exhibit appropriate operational precisions towards successful organization of banquets including the functions of planning, site selection, theme based decorations, audio-visual arrangements, menu management for food and beverage services depending on the occasion, timings etc.	✓	✓	✓	✓	✓			✓				
CO3:Understand and proficiently exhibit skills towards the liaisoning activities carried out for organizing various types of commercial banqueting activities such as preparation and presentation of function prospectus, negotiation of various terms and conditions with different vendors, rates of procurements, advance booking amounts, decision of the number of Pax, deciding on the caterers, slippage fees, cancellation fees, insurance issues, entertainment / electrical / flower arrangement / decoration contracts etc.	✓			✓	✓	✓	✓	✓	✓		✓	
CO4:Apprehend and familiarize themselves with the legal and regulatory frameworks applied for the operations of the banqueting business and show affinities towards work both as solo and in teams for successful organization of the functions.	✓	✓	✓	✓	✓	✓		✓		✓		✓

Table 292: Mapping between COs of MHM5LMI and POs

MHM5LMI:Lifestyle Management – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Realize the concept of lifestyle through its components of health, well-ness, mental and physical fitness, food, nutrition, entertainment, etc. and exhibit skills towards understanding their interrelationships, and effects on human body and mind.	✓	✓		✓	✓							✓
CO2:Exhibit operational precisions towards understanding the consumer behavior towards adaptation and maintenance of lifestyles, their impact on society and economies, specifications, segmentations etc.	✓	✓		✓	✓	✓		✓			✓	✓
CO3:Gain thorough knowledge and proficiently exhibit skills towards management of lifestyle products through various industry sectors such as tourism, transportation, hotels, restaurants, catering services, events, recreation, entertainment, gaming etc. including their planning, designing, promotion, and marketing, sales operations.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO4:Apprehend and familiarize themselves with the ethical, legal, and regulatory aspects towards lifestyle management including adaptation of suitable strategies for sustainable growth and development.	✓			✓	✓	✓		✓		✓	✓	



Table 293: Mapping between COs of MHM5EPCI and POs

MHM5EPCI:Event Planning and Coordination – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Define the basic concepts related to event management including its definitions, characteristics, typologies, planning, market scenarios etc. exhibit skills towards professional planning, organization, and run the business of events by apprehending the social, economic, political, and environmental effects on them.	✓	✓	✓	✓	✓						✓	
CO2:Exhibit operational precisions towards the legal and regulatory frameworks such as negotiating, contracting, working with vendors, license and permit procedures, risk management, legalities and insurance factors etc. in order to successfully organizing various types of events.	✓			✓	✓	✓		✓		✓	✓	
CO3:Gain comprehensive knowledge regarding the promotional tools of advertising, brand building, public relations, publicity, and sponsorship in marketing international events and apply them proficiently in business operations.	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO4:Understand the multi-disciplinary nature of events and demonstrate adequate skills towards managing its various aspects through activities of planning, budgeting, venue selection, staffing, duty allocation, creating ambience, theme selection, rehearsals, arranging catering, accommodating the guests and staffs, monitoring and managing the event, briefing etc.	✓			✓	✓	✓		✓	✓	✓	✓	

Table 294: Mapping between COs of MHM5FBMII and POs

MHM5FBMII:Practical & FAQ Classes for Food & Beverage Management												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain detailed knowledge and exhibit adequate proficiencies towards identification, operations of various types of tools, equipment, ingredients, and raw materials along with their care, maintenance and storage as well as the preparation of various types of cuts, folds, stocks, sauce, soups, salads,mise-en-place, seasoning, garnishing etc.used in professional cooking activities.	✓		✓		✓	✓	✓	✓	✓			✓
CO2:Exhibit operational precisions towards the planning, preparations, and demonstration of three to four course Indian and International cuisines along with delicacies produced in bakery and confectionary and larder sections.	✓				✓				✓		✓	
CO3:Gain comprehensive knowledge and demonstrate affinities towards serving various types of alcoholic and non-alcoholic beverages along with preparation of mixed drinks such as cock-tails and mock-tails.	✓	✓			✓				✓		✓	
CO4:Understand and professionally apply the concepts of menu planning, designing, purchasing, storing, controlling, and revenue management etc. in day to day commercial hospitality business operations.	✓	✓	✓	✓	✓	✓			✓		✓	✓
CO5:Show expert level of knowledge and skills towards planning, handling, operating and managing various food and beverage operations in commercial settings.	✓		✓	✓	✓					✓		✓

Table 295: Mapping between COs of MHM5RDMIII and POs

MHM5RDMIII:Practical & FAQ Classes for Rooms Division Management												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Gain detailed knowledge and exhibit adequate proficiencies towards front office operations through planning, organizing, staffing, briefing, operating, receiving, and serving the customers in a professional environment.	✓			✓	✓	✓			✓		✓	✓
CO2:Understand and exhibit operational precisions towards the concepts of revenue management to improve the overall profitability of the commercial establishments.	✓	✓	✓	✓	✓		✓	✓				✓
CO3:Acquire comprehensive knowledge and demonstrate key affinities towards detailed housekeeping operations by planning, organizing, staffing, purchasing, briefing and debriefing functions as well as familiarizing with the usages of various tools, equipment, and cleaning agents,	✓	✓	✓	✓	✓		✓		✓			
CO4:Understand and professionally apply the concepts of facilities planning, and designing, decorations and renovations, laundry operations, flower arrangements etc, in commercial housekeeping operations.	✓	✓	✓	✓	✓			✓	✓			
CO5:Show expert level of knowledge and skills towards planning, handling, operating and managing various rooms division operations in commercial settings.	✓			✓	✓	✓			✓	✓	✓	

Table 296: Mapping between COs of MHMBECGI and POs

MHMBECGI:Business Ethics and Corporate Governance - Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the relevance and demonstrate advanced levels of skills towards application of ethical practices in business operations.	✓	✓	✓	✓	✓	✓				✓	✓	
CO2:Gain thorough knowledge regarding the various models used for strategic management of ethical issues and demonstrate the desired skills towards critical evaluation of various ethical issues and application of appropriate tools and strategies towards their management.	✓		✓	✓	✓					✓		
CO3:Appreciate the importance of corporate social responsibility in modern day organizations and utilize their principles proficiently in order to look beyond profit maximization towards gaining positive reputation and recognition.	✓	✓	✓	✓	✓							
CO4:Apprehend the concept of corporate governance and appropriately use their functioning such as analysis of frameworks, and compositions, definitions of roles and responsibilities, overseeing accountabilities, comprehending the legal and regulatory frameworks, as well as management of stakeholders interest towards ensuring smooth operations of the businesses.	✓			✓	✓					✓	✓	
CO5:Familiarize themselves with the case discussions based on the ethical and business values adopted in different countries and societies that will help them in work in a dynamic and multi-cultural environment.	✓	✓	✓	✓	✓					✓		✓

Table 297: Mapping between COs of MHM6SCAI and POs

MHM6SCAI:Strategies for Competitive Advantage – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Understand the relevance of strategies in business operations and demonstrate skills towards their applications in identifying and analyzing the micro and macro environmental factors affecting the business operations both in short and long-term basis.	✓	✓	✓	✓	✓			✓		✓	✓	✓
CO2:Gain thorough knowledge regarding the theory of stakeholders’ and exhibit skills towards aligning them with the interest of the business and managing them both ethically and profitably.	✓	✓	✓	✓	✓			✓		✓	✓	✓
CO3:Familiarize themselves with the proven theoretical concepts, models, and tools used in strategic management process and show detailed affinities towards utilizing them in identifying the true position of the company in the market and react accordingly.	✓			✓	✓	✓	✓	✓	✓			
CO4:Appreciate and utilize the various types of strategies as per the situations prevailing and the position of the company in order to gain competitive advantage over the business adversaries.				✓	✓			✓		✓	✓	✓
CO5:Apprehend and demonstrate dynamic decision making capabilities in business operations.		✓	✓	✓	✓		✓	✓	✓			
CO6:Acknowledge and apply the critical thinking process in business operations in order to devise appropriate strategic approaches to manage the business affairs successfully in a rapidly competitive environment.	✓			✓	✓	✓		✓		✓		

Table 298: Mapping between COs of MHM6CCMI and POs

MHM6CCMI:Cross Cultural Management – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Develop greater levels of awareness towards ever changing global environment and their impacts on business operations and demonstrate adequate skills towards managing a diverse work force in a multi-country set ups.		✓	✓	✓	✓						✓	✓
CO2:Gain thorough knowledge regarding the cross cultural contexts in International business scenarios and successfully apply the theoretical and analytical concepts as per the situations and scenarios.		✓	✓	✓	✓			✓			✓	
CO3:Appreciate the diversity existing within work force and show competencies towards managing inter-cultural and cross-cultural communications and interactions.	✓			✓	✓	✓		✓			✓	
CO4:Demonstrate abilities to manage International business specializations and successfully handle delicate yet critical issues.	✓	✓	✓	✓	✓	✓		✓			✓	
CO5:Familiarize themselves with the cultural intelligence and leadership skills in order to lead and manage people from different backgrounds, regions, religions, cultures and countries.			✓	✓	✓					✓	✓	✓
CO6:Apprehend and show affinities towards the competencies of ethics, neutrality, integrity, tolerance, responsibilities, accountability, sustainability etc. in real life business operations.	✓			✓	✓			✓		✓	✓	✓

Table 299: Mapping between COs of MHM6GPHSI and POs

MHM6GPHSI:Green Practices for Hospitality Sector – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Develop greater levels of awareness towards natural environment, its components, as well as the impacts on business operations and exhibit skills towards the successful integration of natural systems and human-designed systems towards sustainability.	✓	✓	✓	✓	✓			✓				✓
CO2:Gain thorough knowledge regarding the various resources of environment such as energy, land, water, mineral, forests, and show affinities towards their appropriate management and sustainability.	✓	✓	✓	✓	✓					✓		
CO3:Appreciate the concept of human interactions with the environment through various modes and demonstrate adequate skills towards defining, planning, designing, and implementing environmentally sustainable facilities and operational measures for commercial business activities.				✓	✓	✓			✓		✓	
CO4:Familiarize with the best practices implemented in both Indian and International avenues and demonstrate abilities to incorporate those tried, tested, and proven strategies regarding energy and water, conservations, environment education, waste management techniques, Eco practices in designing, landscaping, preventive maintenance, housekeeping activities etc. in their own business operations.			✓	✓	✓	✓		✓	✓		✓	
CO5:Apprehend and show affinities towards the energy efficiency measures through understandings of fuels, their classifications, costing, management, and conservation practices effectively.	✓	✓	✓	✓	✓			✓	✓	✓		✓

Table 300: Mapping between COs of MHM6FBJI and POs

MHM6FBJI:Food and Beverage Journalism – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Develop detailed understandings regarding food, culture, people, consumer behavior and show greater levels of affinities towards story-telling through writings in an ethical, creative, and responsible manner.	✓	✓	✓	✓	✓	✓		✓	✓			
CO2:Gain thorough knowledge regarding investigative journalism and demonstrate appropriate skills in dealing with controversial food and health scenarios, dealing with scams and scandals, and possessing the arts of competent reviewers and critiques.		✓		✓	✓	✓		✓		✓	✓	
CO3:Appreciate the existing and emerging trends in food journalism and demonstrate adequate levels of proficiencies in operating both manual and digital modes while communicating.	✓	✓	✓	✓	✓	✓			✓			
CO4:Familiarize with the technical aspects of food journalism in general and food photography in particular by apprehending the camera functions and shooting architectures, use of tools, equipment, and accessories, lighting arrangements and studio setups, outdoor shooting aspects, output management, designing and presentation of promotional merchandizing, management of beauty, glamour, and fashion in operations.	✓			✓	✓	✓		✓	✓			



Table 301: Mapping between COs of MHM6EMMI and POs

MHM6EMMI:Equipment and Material Management – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Develop detailed understandings regarding organizational purchasing functions and demonstrate practical skills in standard Acquisition procedures such as need recognition, inspection, indenting, requisition, supplier selection, evaluation, purchase, as well as receiving procedures, along with return and refund procedures.	✓		✓	✓	✓	✓	✓	✓	✓			✓
CO2:Gain thorough knowledge regarding store management and exhibit key skills towards their effective operations through familiarizing themselves with detailed classifications, forms, formats and paper work procedures, inventory management, control, and issuance, reorder processes etc.	✓		✓	✓	✓		✓		✓			
CO3:Understand the details of materials management such as cost dynamics, break even analysis, cost and material variance, etc. and show greater levels of affinities towards using them in practice.	✓			✓	✓		✓	✓	✓			
CO4:Familiarize themselves with the kitchen management principles and demonstrate proficiencies in activities of workflow control, layout designing, store management, stewarding functions, indenting, production planning, use of technologies in operations etc.	✓		✓	✓	✓	✓	✓	✓	✓			

Table 302: Mapping between COs of MHM6SRMI and POs

MHM6SRMI:Shopping and Retail Management – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Develop detailed understandings towards the retailing operations and demonstrate skills towards successful management through market study, product and services development, pricing, merchandizing, product assortments, promotions, store management, sales and customer service operations.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO2:Gain thorough knowledge regarding the behavioral aspects of consumers including their motivational factors, buying decision making processes as well as shopping practices etc. and exhibit adequate skills towards designing and operating the retail avenues as per the requirements in order to gain profitable results.	✓			✓	✓	✓		✓	✓	✓	✓	✓
CO3:Understand the importance of People, product, and their presentations in retail set ups and apply appropriate strategies for them for maximizing the operational efficiencies.				✓	✓			✓				
CO4:: Apprehend the cultural, social, economical, legal, political, and technological factors affecting the retail operations and adopt appropriate strategies to mitigate the risk factors prevailing in the environment.	✓		✓	✓	✓	✓		✓	✓	✓		
CO5:Familiarize themselves with the global retailing practices including research, customer relationship management, financial performances, technological trends as well as adaptations of the best practices in their own business operations.	✓	✓	✓	✓	✓	✓	✓	✓			✓	

Table 303: Mapping between COs of MHM6SMMI and POs

MHM6SMMI:Social Media Marketing – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Develop detailed understandings towards the virtual world of digital marketing and social media and exhibit appropriate skills towards using them proficiently in business operations through identifying the potential customers, studying of their online behaviors, promotion of products / services, online transactions, as well as customer case services.	✓	✓		✓	✓	✓	✓	✓	✓		✓	
CO2:Gain thorough knowledge regarding the various social media platforms along with their types, modus operandi, etc. and demonstrate practical based skills towards developing content based approach for their effective usage and applications of advanced concepts of Search Engine Optimization (SEO), Search Engine Marketing (SEM), Optimization,and blogs for achieving effective operational efficiencies.	✓			✓	✓	✓	✓	✓	✓		✓	
CO3:Draw on detailed understandings on the power of social media and demonstrate affinities towards viral marketing efforts for propagating products, services, ideas, and messages across social networks.	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
CO4:Apprehend and familiarize with the legal and regulatory aspects of digital marketing efforts and demonstrate safe, ethical, legal and responsible approach towards operating through various social media platforms.	✓			✓	✓			✓	✓	✓	✓	

Table 304: Mapping between COs of MHM6HWSMI and POs

MHM6HWSMI:Health, Wellness, & Spa Management – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Appreciate the contribution of wellness industry towards the economy and services sector and develop detailed understandings towards their conceptual, philosophical, and applied perspectives, components, dimensions, characteristics, affecting factors, regulatory, licensing and legal compliances etc. for incorporating in to business practices.	✓	✓	✓	✓	✓			✓	✓	✓	✓	
CO2:Gain thorough knowledge regarding the spa environment and exhibit necessary skills towards their efficient management and operations through acquisition, serving, and maintenance of satisfied clientele.	✓	✓	✓	✓	✓			✓		✓		
CO3:Draw on detailed understandings on spa services management and demonstrate the desired skills towards managing the demand-supply scenarios, designing of spa packages, use of safe and ethical measures in operations as well as detailed awareness regarding the tools, equipment, ingredients, and technologies commonly used there.	✓			✓	✓		✓	✓	✓	✓		
CO4:Familiarize with managerial aspects towards efficient and effective spa operations by apprehending the current situation, identifying the changing trends, future prospects and utilizing various models, mechanisms, theories and principles of marketing, finance, operations, human resource management.	✓	✓	✓	✓	✓			✓			✓	✓

Table 305: Mapping between COs of MHM6PRRMIBI and POs

MHM6PRRMIBI:PR and Relationship Marketing for Image Building – Theory												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1: Appreciate the importance of customers, their contributions towards the survival and growth of the business and demonstrate proficiencies towards understanding the consumer behavior, attitudes, satisfaction, and loyalty scenarios and apply the concepts, theoretical models and practical strategies of customer relationship management to manage them effectively.	✓	✓		✓	✓	✓		✓	✓	✓	✓	
CO2: Understand the role of relationship marketing in business development and sustainability and exhibit skills towards its appropriate applications towards conducting the acquisition, serving, and retention functions for investors, employees, and customers of the business.	✓	✓	✓	✓	✓	✓		✓		✓	✓	✓
CO3: Gain thorough knowledge regarding the functioning of public relation activities and their impacts on the business operations and positions and display thorough competencies towards designing, applying and managing public relation activities both in manual and digital modes across various industry segments.	✓	✓	✓	✓	✓	✓			✓			
CO4: Draw on detailed understandings on the image building exercises and involve in efficient use of various communication modes for retaining, enhancing, and managing the corporate image in different situations.	✓			✓	✓	✓			✓			

Table 306: Mapping between COs of MHM6PRHII and POs

MHM6PRHII:Report & Presentation												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1:Appreciate the importance of social science research in business decision making process and identify key research areas within the field of hospitality and tourism.	✓	✓		✓	✓	✓	✓	✓	✓			
CO2:Use various types of tools, equipment, techniques, and applications to identify, collect, prepare, analyze, and interpret suitable data and information about the market to make decisions regarding the products and services.				✓	✓	✓	✓	✓	✓			
CO3:Gain thorough knowledge towards the creative synthesis of the existing knowledge base through literature review process and techniques in order to identify the gaps and justify the needs for further research.	✓			✓	✓	✓	✓	✓				
CO4:Demonstrate the capabilities to plan and execute independent research works by using the existing proven methodologies, principles, models as well as developing and introducing new models and concepts of their own with adequate and suitable proofs.	✓	✓		✓	✓	✓	✓	✓	✓			
CO5:Draw on detailed understandings on the ethical, legal, and regulatory frameworks in social science research and adapt their practices while designing, implementing, and evaluating the research works.	✓			✓	✓	✓	✓	✓	✓	✓		
CO6:Familiarize themselves with the concepts of time management, evidence based arguments, adequate referencing practices and use them in their research presentations.	✓			✓	✓	✓	✓	✓	✓	✓		
CO7:Understand the process of report writing and adequately use them towards written and oral presentations.	✓			✓	✓	✓			✓			
CO8:Develop capabilities towards adaptations of key traits in critical thinking and creativity processes in order to offer unique solutions to the existing and emerging issues in the market place.				✓	✓	✓	✓	✓				

## 4 Pharmaceutical Sciences Programs

### 4.1 Program Outcomes for B.Pharm/ M.Pharm

The following Program Outcomes (POs) are defined for B.Pharm/ M.Pharm in line with the accreditation bodies:

- PO1. **Pharmacy Knowledge:** Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; and manufacturing practices.
- PO2. **Problem analysis:** Utilize the principles of scientific inquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.
- PO3. **Technical Skills:** Develop an ability to use various instrument and equipment with an in depth knowledge on standard operating procedures for the same.
- PO4. **Modern Tool Usage:** Develop/apply appropriate techniques, resources, and IT tools including prediction and modeling to complex health issues and medicine effect with an understanding of the limitations.
- PO5. **Research and Development:** To demonstrate knowledge of identifying a problem, critical thinking, analysis and provide rational solutions in different disciplines of Pharmaceutical Sciences and Technology.
- PO6. **Communication:** Communicate effectively on health care activities with the medical community and with society at large, provide drug information, give and receive clear instructions.
- PO7. **The Pharmacist and Society:** Apply reasoning informed by the contextual knowledge to comprehend medical prescription, perform patient counseling and assess issue on drug safety and the consequent responsibilities relevant to the professional pharmacy practice.
- PO8. **Ethics:** Follow the code of ethics and commit to professional values and responsibilities and norms of the pharmacy practice. Apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.
- PO9. **Environment and sustainability:** Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

## 4.2 Program Outcomes for M.Sc in Chemical Biology and Drug Design

The following Program Outcomes (POs) are defined for Master of Science in Chemical Biology and Drug Design Course in line with the accreditation bodies:

- PO1. **Basic Scientific Knowledge:** Possess knowledge and comprehension of the core and basic knowledge associated with the profession of chemical biology and drug design including biochemical sciences; pharmaceutical sciences; organic chemistry, drug design, statistical concepts etc.
- PO2. **Problem analysis:** Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.
- PO3. **Technical Skills:** Develop an ability to use various instrument and equipment with an in depth knowledge on standard operating procedures for the same.
- PO4. **Modern Tool Usage:** Develop/apply appropriate techniques, resources, and IT tools including prediction and modeling to complex health issues and medicine effect with an understanding of the limitations.
- PO5. **Research and Development:** To demonstrate knowledge of identifying a problem, critical thinking, analysis and provide rational solutions in different disciplines of Pharmaceutical Sciences and Technology.
- PO6. **Invention and Entrepreneurship:** Find the application of modern tools to integrate health care systems, design an effective product with commercial advantage and societal benefit, perform risk analysis and become entrepreneur.



## 4.3 Mapping of CO Vs POs

### 4.3.1 Bachelor of Pharmacy (B.Pharm)

Table 307: Mapping between COs of BP101T and POs

BP101T:Human Anatomy and Physiology I									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To learn about the gross morphology, structure and functions of cell, skeletal, muscular, cardiovascular system of the human body.	✓								
CO2:To understand the various homeostatic mechanisms and their imbalances.	✓								
CO3:To be able to identify the different types of bones in human body.	✓								
CO4:To be able to identify the various tissue of different systems of human body.	✓		✓						
CO5:To learn about the various experimental techniques related to physiology.			✓						
CO6:They would have learnt various techniques like blood group determination, blood pressure measurement, blood cells counting									

Table 308: Mapping between COs of BP102T and POs

BP102T:Pharmaceutical Analysis I									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To develop the ideas with the fundamental of analytical chemistry	✓								
CO2:To learn the fundamental methodology to prepare different strength of solutions.			✓						
CO3:To know the sources of mistakes and errors in analysis and their minimizing techniques			✓						
CO4:To develop the fundamentals of volumetric analytical skills.	✓								
CO5:To acquire the basic knowledge in the principles of electrochemical analytical techniques	✓								

Table 309: Mapping between COs of BP103T and POs

BP103T:Pharmaceutics I									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To acquire fundamental knowledge in preparing conventional dosage forms	✓								
CO2:To understand the basics of different dosage forms	✓								
CO3:To understand the pharmaceutical incompatibilities and pharmaceutical calculations	✓								
CO4:To understand the professional way of handling the prescription							✓		

Table 310: Mapping between COs of BP104T and POs

BP104T:Pharmaceutical Inorganic Chemistry									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To be well acquainted with the principles of limit tests.	✓		✓						
CO2:To get familiar with different classes of inorganic pharmaceuticals and their analysis	✓								
CO3:To know about identification of different anions, cations and different inorganic pharmaceuticals.	✓		✓						
CO4:To acquire knowledge about the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals	✓		✓						
CO5:To understand the medicinal and pharmaceutical importance of inorganic compounds	✓								
CO6:To get introduced to a variety of inorganic drug classes.	✓								

Table 311: Mapping between COs of BP105T and POs

BP105T:Communication skills									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To understand the behavioral needs for a pharmacist to function effectively in the areas of pharmaceutical operation						✓	✓		
CO2:To communicate effectively (Verbal and Non Verbal)						✓			
CO3:To be able to effectively manage the team as a team player						✓			
CO4:To develop interview skills			✓			✓			
CO5:To develop leadership qualities and essentials						✓			

Table 312: Mapping between COs of BP106RBT and POs

BP106RBT:Remedial Biology									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To make aware the students about cell biology ( Basic Nature of Plant cell and Animal cell)	✓								
CO2:To make aware the students about classification system of both plants and animals	✓								
CO3:To make aware the students about various tissue system and organ system in plant and animals	✓								
CO4:To make aware the students about the theory of evolution	✓								
CO5:To make aware the students about the anatomy and Physiology of plants and animals	✓								

Table 313: Mapping between COs of BP106RMT and POs

BP106RMT:Remedial Mathematics									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To apply mathematical concepts and principles to perform computations for Pharmaceutical Sciences		✓							
CO2:To create, use and analyze mathematical representations and mathematical relationships		✓							
CO3:To communicate mathematical knowledge and understanding to help in the field of clinical pharmacy	✓								
CO4:To perform abstract mathematical reasoning		✓							

Table 314: Mapping between COs of BP201T and POs

BP201T:Human Anatomy and Physiology II									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To study about the gross morphology, structure and functions of nervous, respiratory, urinary and reproductive systems in the human body	✓								
CO2:To study in detailed about energy and metabolism	✓								✓
CO3:To identify the various organs of different systems of human body.	✓								
CO4:To learnt about the experiments like neurological reflex, body temperature measurement	✓								
CO5:To study the interlinked mechanisms in the maintenance of normal functioning of human body	✓								
CO6:To learnt and performed the experiments like olfaction, gustation reflex and eye sight	✓								

Table 315: Mapping between COs of BP202T and POs

BP202T:Pharmaceutical Organic Chemistry I									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To be able to write the structure, name of the organic compound	✓								
CO2:To acquire knowledge about the type of isomerism	✓								
CO3:To be able to write the reaction, name the reaction and orientation of reactions	✓								
CO4:To be able to identify/confirm the unknown organic compound	✓								✓
CO5:To acquire the knowledge about the naming reactions of carbonyl compounds	✓								
CO6:To perform common laboratory techniques including reflux, distillation, recrystallization, vacuum filtration, etc.	✓								

Table 316: Mapping between COs of BP203T and POs

BP203T:Biochemistry									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To understand the importance of metabolism of substrates.	✓								
CO2:To acquire knowledge about chemistry and biological importance of biological macromolecules.	✓								
CO3:To acquire knowledge in qualitative and quantitative estimation of the biological macromolecules.	✓								
CO4:To know the interpretation of data emanating from a clinical test lab	✓								
CO5:To know how physiological conditions influence the structures and re-activities of biomolecules	✓								
CO6:To understand the basic principles of protein and polysaccharide structure	✓								

Table 317: Mapping between COs of BP204T and POs

BP204T:Pathophysiology									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To describe the etiology and pathogenesis of the selected disease states	✓								
CO2:To acquire knowledge of signs and symptoms of the diseases	✓								
CO3:To be able to identify the complications of the diseases.	✓								
CO4:To know about most commonly encountered pathophysiological state(s) and/or disease mechanism(s), as well as any clinical testing requirements	✓								

Table 318: Mapping between COs of BP205T and POs

BP205T:Computer Applications in Pharmacy									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To apply the knowledge of mathematics and computing fundamentals to pharmaceutical applications for any given requirement				✓					
CO2:To design and develop solutions to analyze pharmaceutical problems using computers.				✓					
CO3:To integrate and apply efficiently the contemporary IT tools to all Pharmaceutical related activities				✓					

Table 319: Mapping between COs of BP206T and POs

BP206T:Environmental sciences									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To create an awareness about environmental problems, develop an attitude towards of concern for the environment.									✓

Table 320: Mapping between COs of BP301T and POs

BP301T:Pharmaceutical Organic Chemistry II									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To acquire basic knowledge regarding general methods of preparation of organic compounds.	✓								
CO2:To understand the reactions of some organic compounds.	✓								
CO3:To understand reactivity of organic compounds.	✓								
CO4:To understand the mechanisms and orientation of chemical reactions	✓								
CO5:To acquire knowledge in heterocyclic compounds	✓								
CO6:To acquire knowledge about the electrophilic and nucleophilic reactions.	✓								

Table 321: Mapping between COs of BP302T and POs

BP302T:Physical Pharmaceutics I									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To understand the physicochemical properties of drug molecules, pH, and solubility	✓								
CO2:To acquire knowledge about the role of surfactants, interfacial phenomenon and thermodynamics	✓								
CO3:To acquire knowledge about the flow behavior of fluids and concept of complexation	✓								
CO4:To analyze the chemical stability tests of various drug products		✓							
CO5:To acquire knowledge about the physical properties of solutions, buffers, isotonicity, disperse systems and rheology.	✓								
CO6:To acquire knowledge about the physicochemical properties of drugs including solubility, distribution, adsorption, and stability.	✓								
CO7:To acquire basic knowledge of pharmaceutical suspensions and colloids.	✓								
CO8:To acquire basic understanding of the pharmaceutical applications of various physical principles such as lyophilization, aerosols, condensed systems, and phase diagram.	✓								

Table 322: Mapping between COs of BP303T and POs

BP303T:Pharmaceutical Microbiology									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To be able to acquire, articulate, retain and apply specialized language and knowledge relevant to microbiology.	✓								
CO2:To acquire competency in laboratory safety and in routine and specialized microbiological laboratory skills			✓						
CO3:To be able to demonstrate isolation of and identification of microbes.			✓						
CO4:To be able to design microbiology laboratory considering all the aspects of safety			✓						
CO5:To acquire knowledge about validating the microbiological equipment and reporting the observations	✓								

Table 323: Mapping between COs of BP304T and POs

BP304T:Pharmaceutical Engineering									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To know various unit operations used in Pharmaceutical industries. To understand the material handling techniques.	✓								
CO2:To perform various processes involved in pharmaceutical manufacturing process.			✓						
CO3:To carry out various test to prevent environmental pollution.			✓						
CO4:To appreciate and comprehend significance of plant lay out design for optimum use of resources.	✓		✓						
CO5:To appreciate the various preventive methods used for corrosion control in pharmaceutical industries	✓		✓						

Table 324: Mapping between COs of BP401T and POs

BP401T:Pharmaceutical Organic Chemistry III									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To acquire the knowledge and understanding of the basic experimental principles of heterocyclic chemistry.	✓								
CO2:To be able to draw the structures and synthesize simple pharmaceutically active organic compounds having five and six membered heterocyclic compounds.	✓								
CO3:To be able to describe detailed mechanisms for common naming reactions.	✓								
CO4:To be able to run experimental techniques, procedures and safe laboratory practices.	✓								
CO5:To learn stereo-chemical features including conformation and stereo electronic effects and geometrical isomers	✓								



Table 325: Mapping between COs of BP402T and POs

BP402T:Medicinal Chemistry I									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To understand the correlating between pharmacology of a disease and its mitigation or cure	✓								
CO2:To understand the drug metabolic pathways, adverse effect and therapeutic value of drugs	✓								
CO3:To know the structural activity relationship of different class of drugs.	✓								
CO4:To get acquainted with the synthesis of some important class of drugs.	✓								
CO5:To acquire knowledge about the mechanism pathways of different class of medicinal compounds	✓								
CO6:To understand the chemistry of drugs with respect to their pharmacological activity	✓								

Table 326: Mapping between COs of BP403T and POs

BP403T:Physical Pharmaceutics II									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To know the physicochemical properties of drug molecules, pH, and solubility	✓								
CO2:To explain the role of surfactants, interfacial phenomenon and thermodynamics	✓								
CO3:To describe the flow behavior of fluids and concept of complexation	✓								
CO4:To analyze the chemical stability tests of various drug products	✓								
CO5:To understand the physical properties of solutions, buffers, isotonicity, disperse systems and rheology.	✓								
CO6:To understand of physicochemical properties of drugs including solubility, distribution, adsorption, and stability.	✓								
CO7:To have basic knowledge of pharmaceutical suspensions and colloids.	✓								
CO8:To have basic understanding of the pharmaceutical applications of various physical principles such as lyophilization, aerosols, condensed systems, and phase diagram.	✓								

Table 327: Mapping between COs of BP404T and POs

BP404T:Pharmacology I									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To understand the pharmacological actions of different categories of drugs	✓								
CO2:To study about mechanism of drug action at organ system/sub cellular/ macromolecular levels.	✓								
CO3:To understand the application of basic pharmacological knowledge in the prevention and treatment of various diseases.	✓								
CO4:To observe the effect of drugs on animals by simulated experiments	✓			✓					
CO5:To understand the signal transduction mechanism of various receptors	✓								

Table 328: Mapping between COs of BP405T and POs

BP405T:Pharmacognosy and Phytochemistry I									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To know the techniques in the cultivation and production of crude drugs	✓								
CO2:To know the crude drugs, their uses and chemical nature	✓								
CO3:To know the evaluation techniques for the herbal drugs	✓								
CO4:To understand the microscopic and morphological features of crude drugs	✓								
CO5:To perform the microscopic experiments and morphological evaluation of crude drugs			✓						

Table 329: Mapping between COs of BP501T and POs

BP501T:Medicinal Chemistry II									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To know the correlating between pharmacology of a disease and its mitigation or cure.	✓								
CO2:To write the chemical synthesis of some drugs.	✓								
CO3:To know the structural activity relationship of different class of drugs.	✓								✓
CO4:To acquire knowledge about the mechanism pathways of different class of medicinal compounds.	✓								
CO5:To acquire knowledge about the chemotherapy for cancer.	✓								
CO6:To understand the chemistry of drugs with respect to their pharmacological activity.	✓								

Table 330: Mapping between COs of BP502T and POs

BP502T:Industrial Pharmacy I									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To know the design and layout of various procedures in pharmaceutical industry	✓								
CO2:To know the various pharmaceutical dosage forms and their manufacturing techniques	✓								
CO3:To know various considerations in development of pharmaceutical dosage forms	✓								
CO4:To understand the quality control of solid, liquid and semisolid dosage forms	✓								
CO5:To formulate solid, liquid and semisolid dosage forms and evaluate them for their quality	✓								

Table 331: Mapping between COs of BP503T and POs

BP503T:Pharmacology II									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To understand the mechanism of drug action and its relevance in the treatment of different diseases	✓								
CO2:To learn the skill of isolation of different organs/tissues from the laboratory animals by simulated experiments			✓		✓				
CO3:To learn the various receptor actions using isolated tissue preparation	✓								
CO4:To understand the cell communication mechanism	✓								
CO5:To acquire knowledge about the newer targets of several disease conditions for treatment	✓								

Table 332: Mapping between COs of BP504T and POs

BP504T:Pharmacognosy and Phytochemistry II									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To know the modern extraction techniques, characterization and identification of the herbal drugs and phytoconstituents	✓								
CO2:To understand the preparation and development of herbal formulation.	✓								
CO3:To understand the herbal drug interactions	✓								
CO4:To acquire skill of isolation procedures and identification of phytoconstituents			✓						

Table 333: Mapping between COs of BP505T and POs

BP505T:Pharmaceutical Jurisprudence									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To know the pharmaceutical legislations and their implications in the development and marketing	✓								
CO2:To know the various Indian pharmaceutical acts, laws and schedule	✓								
CO3:To know about the regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals	✓								
CO4:To know the code of ethics during the pharmaceutical practice								✓	

Table 334: Mapping between COs of BP601T and POs

BP601T:Medicinal Chemistry III									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To develop an understanding of the physico-chemical properties of drugs	✓								
CO2:To understand how current drugs were developed by using pharmacophore modeling and docking technique.	✓								
CO3:To acquire knowledge in the chemotherapy for cancer and microbial diseases and different anti-viral agents.	✓								
CO4:To acquire knowledge about the mechanism pathways of different class of medicinal compounds.	✓								
CO5:To know about variety of drug classes and some pharmacological properties.	✓								

Table 335: Mapping between COs of BP602T and POs

BP602T:Pharmacology III									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To study the mechanism of drug action and its relevance in the treatment of different infectious diseases	✓								
CO2:To comprehend the principles of toxicology and treatment of various poisonings and they came across the methods of toxicity studies	✓								
CO3:To study about symptoms of several poisonings	✓								
CO4:To study about treatment of several poisonings Students will understand the toxicity profile of each drugs	✓								

Table 336: Mapping between COs of BP603T and POs

BP603T:Herbal Drug Technology									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To acquire knowledge about the recognition, collection and preservation of medicinal plants.	✓								
CO2:To acquire knowledge about the toxicological aspects of active ingredients and finished products.	✓								
CO3:To acquire knowledge about the study, design, management, control and conduction of the processing systems of medicinal plants and derivatives.	✓								
CO4:To know the management of quality of medicinal plant products and derivatives.	✓								
CO5:To know the possible application of medicinal plants and derivatives as health products, including the food and cosmetics sectors.	✓								

Table 337: Mapping between COs of BP604T and POs

BP604T:Biopharmaceutics and Pharmacokinetics									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To understand the concept of ADME of drug in human body.	✓								
CO2:To determine the various pharmacokinetic parameters from either plasma concentration or urinary excretion data for drug.			✓	✓					
CO3:To apply the various regulations related to developing BA-BE study protocol for the new drug molecule.		✓			✓				

Table 338: Mapping between COs of BP605T and POs

BP605T:Pharmaceutical Biotechnology									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To understand the various techniques used in modern biotechnology.	✓								
CO2:To be able to provide examples of current applications of biotechnology and advances in the different areas like medical, microbial, environmental, bioremediation, agricultural, plant, animal, and forensic.	✓								
CO3:To be able to explain the concept and application of monoclonal antibody technology.	✓								
CO4:To be able to demonstrate and provide examples on how to use microbes and mammalian cells for the production of pharmaceutical products.	✓								
CO5:To explain the general principles of generating transgenic plants, animals and microbes.	✓								

Table 339: Mapping between COs of BP606T and POs

BP606T:Quality Assurance									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To understand the importance of quality in pharmaceutical products.	✓								
CO2:To know the importance of Good practices such as GMP, GLP and the factors affecting the quality of pharmaceuticals	✓								
CO3:To understand the regulatory aspects of pharmaceuticals.	✓								
CO4:To know the process involved in manufacturing of pharmaceuticals in different departments	✓								
CO5:To understand the various documentation processes	✓								

Table 340: Mapping between COs of BP701T and POs

BP701T:Instrumental Methods of Analysis									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To learn to the basic theoretical knowledge of the instrumentation techniques available	✓								
CO2:To theoretically understand the aspects of separation for multi components.	✓								
CO3:To acquire practical skills for the analysis of drugs and excipients using various instrumentation techniques.			✓	✓					
CO4:To make accurate analysis and report the results in defined formats.		✓	✓						
CO5:To learn documentation and express the observations with clarity.			✓						



Table 341: Mapping between COs of BP702T and POs

BP702T:Industrial Pharmacy II									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To know the process of pilot plant and scale up of pharmaceutical dosage forms	✓		✓						
CO2:To understand the process of technology transfer from lab scale to commercial batch			✓						
CO3:To know different laws and acts that regulate pharmaceutical industry	✓							✓	
CO4:To understand the approval process and regulatory requirements for drug products	✓		✓						

Table 342: Mapping between COs of BP703T and POs

BP703T:Pharmacy Practice									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To demonstrate knowledge and ability to use principles of therapeutics, quality improvement, communication, economics, health behavior, social and administrative aspects, health policy and legal issues in the practice of pharmacy.							✓		
CO2:To acquire knowledge of drug distribution methods in hospital and apply it in the practice of pharmacy.							✓		
CO3:To apply principles of drug store management and inventory control to medication use.							✓		
CO4:To provide patient-centered care to diverse patients using the best available evidence and monitor drug therapy of patient through medication chart review, obtain medication history interview and counsel the patients, identify drug related problems.							✓		
CO5:To be engaged in innovative activities by making use of the knowledge of clinical trials.							✓		
CO6:To exhibit professional ethics by producing safe and appropriate medication use throughout society							✓		

Table 343: Mapping between COs of BP704T and POs

BP704T:Novel Drug Delivery System									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To know about current developments in drug delivery technologies					✓				
CO2:To understand various approaches for development of novel drug delivery systems					✓				
CO3:To understand the criteria for selection of drugs and polymers for the development of novel drug delivery systems, their formulation and evaluation					✓				
CO4:To be able to design or recommend a drug delivery system					✓				

Table 344: Mapping between COs of BP801T and POs

BP801T:Biostatistics and Research Methodology									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To know the operation of M.S. Excel, SPSS, R and MINITAB®, DoE (Design of Experiment)				✓					
CO2:To know the various statistical techniques to solve statistical problems		✓							
CO3:To appreciate statistical techniques in solving the problems		✓							
CO4:To know the applications of statistics in clinical data management		✓							

Table 345: Mapping between COs of BP802T and POs

BP802T:Social and Preventive Pharmacy									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To acquire high consciousness/realization of current issues related to health and pharmaceutical problems within the country and worldwide							✓		
CO2:To have a critical way of thinking based on current healthcare development.							✓		
CO3:To evaluate alternative ways of solving problems related to health and pharmaceutical issues							✓		
CO4:To design a better health care service system							✓		

Table 346: Mapping between COs of BP803ET and POs

BP803ET:Pharma Marketing Management									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To understand of sales and marketing of pharmaceutical products		✓							
CO2:To know about various policies for drug inventory management		✓							
CO3:To know about retail and wholesale marketing		✓							
CO4:To understand business potential and development in product sales and manufacturing		✓							

Table 347: Mapping between COs of BP804ET and POs

BP804ET:Pharmaceutical Regulatory Science									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To know about legal aspects and quality policies for drug manufacturing								✓	
CO2:To know about the process of drug discovery and development					✓				
CO3:To know the regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals								✓	
CO4:To know the regulatory approval process and their registration in Indian and international markets								✓	

Table 348: Mapping between COs of BP805ET and POs

BP805ET:Pharmacovigilance									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To know why drug safety monitoring is important							✓		
CO2:To know the history and development of pharmacovigilance							✓		
CO3:To be aware about the national and international scenario of pharmacovigilance							✓	✓	
CO4:To know the dictionaries, coding and terminologies used in pharmacovigilance	✓			✓					

Table 349: Mapping between COs of BP806ET and POs

BP806ET:Quality Control and Standardization of Herbals									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To know WHO guidelines for quality control of herbal drugs	✓								
CO2:To know Quality assurance in herbal drug industry	✓								
CO3:To know the regulatory approval process and their registration in Indian and international markets	✓								
CO4:To appreciate EU and ICH guidelines for quality control of herbal drugs	✓								

Table 350: Mapping between COs of BP807ET and POs

BP807ET:Computer Aided Drug Design									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To learn about the design and discovery of lead molecules				✓	✓				
CO2:To learn about the role of drug design in drug discovery process				✓	✓				
CO3:To learn about the concept of QSAR and docking				✓	✓				
CO4:To learn about the various strategies to develop new drug like molecules				✓	✓				

Table 351: Mapping between COs of BP808ET and POs

BP808ET:Cell and Molecular Biology									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To summarize cell and molecular biology history	✓								
CO2:To summarize cellular functioning and composition	✓								
CO3:To describe the chemical foundations of cell biology	✓								
CO4:To summarize the DNA properties of cell biology	✓								

Table 352: Mapping between COs of BP809ET and POs

BP809ET:Cosmetic Science									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To understand the principles of formulation and building blocks of skin care products	✓								
CO2:To understand the principles of formulation and building blocks of hair care products	✓								
CO3:To understand the role of herbs in cosmetics	✓								
CO4:To understand the principles of Cosmetic Evaluation	✓			✓					

Table 353: Mapping between COs of BP810ET and POs

BP810ET:Experimental Pharmacology									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To know the applications of various commonly used laboratory animals.					✓				
CO2:To know the various screening methods used in preclinical research.					✓				
CO3:To know the importance of biostatistics and research methodology					✓				

Table 354: Mapping between COs of BP811ET and POs

BP811ET:Advanced Instrumentation Techniques									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To understand the advanced instruments used and its applications in drug analysis				✓	✓				
CO2:To understand the chromatographic separation and analysis of drugs				✓	✓				
CO3:To understand the calibration of various analytical instruments				✓	✓				
CO4:To Know analysis of drugs using various analytical instruments				✓	✓				

Table 355: Mapping between COs of BP812ET and POs

BP812ET:Dietary Supplements and Nutraceuticals									
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1:To understand the need of supplements by the different group of people to maintain healthy life	✓						✓		
CO2:To understand the outcome of deficiencies in dietary supplements.	✓						✓		
CO3:To understand the components in dietary supplements and the application	✓						✓		
CO4:To understand the regulatory and commercial aspects of dietary supplements including health claims								✓	

### 4.3.2 M. Pharm in Industrial Pharmacy

The following PSOs are defined for the said Program;

**PSO1: Expertise in the field of Pharmaceutical Sciences-** Understand a core and basic knowledge in different subjects of Pharmaceutical Sciences.

**PSO2: Service as Pharmacist-** Render the services to the public by providing patient centric effective treatments to curb the therapeutic issues with the required medicines and explain the effects of the drugs by analyzing the scientific literature for improving their health and well-being.

**PSO3: Invention and Entrepreneurship-** Find the application of modern tools to integrate health care systems, design an effective product with commercial advantage and societal benefit, perform risk analysis and become entrepreneur.

**PSO4: Pharmaceutical research and development-** Capability of applying the basic principles of Pharmaceutical sciences for drug discovery and formulation development.

Table 356: Mapping between COs of MPH101T and (POs& PSOs)

MPH101T:Modern Pharmaceutical Analytical Techniques													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To acquire the basic knowledge on assay of single and multiple component pharmaceuticals by using various analytical instruments.	✓									✓			
CO2:To develop basic practical skills using instrumentation techniques			✓	✓									
CO3:To acquire skills in selecting the suitable techniques for analysis of drugs and pharmaceuticals			✓							✓			
CO4:To expand the theoretical knowledge on various instrumental techniques available for analysis of organic substances	✓									✓			
CO5:To apply the knowledge learnt in developing new procedures of their own design					✓								✓
CO6:To compare various methods of analysis and their outcomes		✓								✓			

Table 357: Mapping between COs of MIP102T and (POs& PSOs)

MIP102T:Pharmaceutical Formulation													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To know the scheduled activities in a Pharmaceutical firm.	✓									✓			
CO2:To acquire knowledge about the pre-formulation studies of pilot batches of pharmaceutical industry.	✓									✓			
CO3:To know the significance of dissolution and product stability.	✓									✓			

Table 358: Mapping between COs of MIP103T and (POs& PSOs)

MIP103T:Novel Drug Delivery System													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To know the need, concept, design and evaluation of various customized, sustained and controlled release	✓									✓			
CO2:To formulate and evaluate various novel drug delivery systems			✓		✓								✓

Table 359: Mapping between COs of MIP104 and (POs& PSOs)

MIP104:Intellectual Property Rights													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To know the Regulatory Audit process.							✓						
CO2:To know the regulatory guidelines for drug and drug products							✓						
CO3:To know the regulatory requirements for contract research organization							✓						

Table 360: Mapping between COs of MIP201T and (POs& PSOs)

MIP201T:Advanced Biopharmaceutics and Pharmacokinetics													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To know the basic concepts in biopharmaceutics and pharmacokinetics.	✓									✓			
CO2:To know the use of raw data and derive the pharmacokinetic models and parameters the best describe the process of drug absorption, distribution, metabolism and elimination.		✓	✓										
CO3:To critically evaluate biopharmaceutics studies involving drug product equivalency.		✓	✓										
CO4:To know the design and evaluate dosage regimens of the drugs using pharmacokinetic and biopharmaceutic parameters		✓	✓										



Table 361: Mapping between COs of MIP202T and (POs& PSOs)

MIP202T:Scale up Technology Transfer													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To know about managing the scale up process in pharmaceutical industry.				✓								✓	
CO2:To know the process of technology transfer.				✓								✓	
CO3:To establish safety guidelines, which prevent industrial hazards			✓						✓				

Table 362: Mapping between COs of MIP203T and (POs& PSOs)

MIP203T:Pharmaceutical Production Technology													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:Handle the scheduled activities in a Pharmaceutical firm.			✓	✓									
CO2:Manage the production of large batches of pharmaceutical formulations.			✓	✓									

Table 363: Mapping between COs of MIP204T and (POs& PSOs)

MIP204T:Entrepreneurship Development													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To know the role of enterprise in national and global economy												✓	
CO2:To know the dynamics of motivation and concepts of entrepreneurship												✓	
CO3:To know the demands and challenges of growth strategies and networking.												✓	

Table 364: Mapping between COs of MRM301T and (POs& PSOs)

MRM301T:Research Methodology & Biostatistics													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:Learn general research methodology					✓								✓
CO2:Understand the basic concepts of biostatistics					✓								✓
CO3:Understand the functions of ethics committees in medical research								✓					
CO4:Learn the guidelines for developing animal facilities								✓					
CO5:Learn the guidelines for the experimentation on animals								✓					
CO6:Understand the genesis of bioethics with special reference to Helsinki declaration								✓					

### 4.3.3 M. Pharm in Pharmaceutical Analysis

The following PSOs are defined for the said Program;

- PSO1: Expertise in the field of Pharmaceutical Sciences-** Understand a core and basic knowledge in different subjects of Pharmaceutical Sciences.
- PSO2: Service as Pharmacist -** Render the services to the public by providing patient centric effective treatments to curb the therapeutic issues with the required medicines and explain the effects of the drugs by analyzing the scientific literature for improving their health and well-being.
- PSO3: Invention and Entrepreneurship-** Find the application of modern tools to integrate health care systems, design an effective product with commercial advantage and societal benefit, perform risk analysis and become entrepreneur.
- PSO4: Pharmaceutical research and development-** Capability of applying the basic principles of Pharmaceutical sciences for drug discovery and formulation development.

Table 365: Mapping between COs of MPA102T and (POs& PSOs)

MPA102T:Advanced Pharmaceutical Analysis													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To understand the concepts of impurity profiling		✓			✓								✓
CO2:To gain appropriate knowledge about appropriate analytical skills required for the analysis of impurities in the bulk drugs and various formulations.			✓		✓								✓
CO3:To acquire idea on the categorizing the impurities like (inorganic, organic and residual solvents)			✓		✓								✓
CO4:To understand the official and non-official methods to analyses the related substance.			✓		✓								✓

Table 366: Mapping between COs of MPA103T and (POs& PSOs)

MPA103T:Pharmaceutical Validation													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To learn the importance of validation.			✓										
CO2:To learn the importance of patent and intellectual property rights.			✓		✓								✓
CO3:To acquire training on the qualification aspects of instruments.			✓	✓									
CO4:To learn the importance of calibration to be performed for the instruments.			✓	✓									
CO5:To learn the various validation aspects to be carried out in the industry.			✓										
CO6:To gain the knowledge on validation of various components such as instrument validation, cleaning validation and process validation.			✓										

Table 367: Mapping between COs of MPA104T and (POs& PSOs)

MPA104T:Food Analysis													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To understand various analytical techniques in the determination of food constituents			✓	✓									
CO2:To understand various analytical techniques in the determination of food additives,			✓	✓									
CO3:To understand various analytical techniques in the determination of finished food products			✓	✓									
CO4:To understand various analytical techniques in the determination of pesticides in food			✓	✓									
CO5:To understand various analytical techniques in the determination of knowledge on food regulations			✓	✓									

Table 368: Mapping between COs of MPA201T and (POs& PSOs)

MPA201T:Advanced Instrumental Analysis													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To understand the detailed interpretation pattern for the organic substances		✓			✓								✓
CO2:To understand theoretical aspects, practical aspects and troubleshooting methods of the HPLC, GC, SFC and Electrophoresis techniques			✓	✓									
CO3:To know theoretical aspects of hyphenated analytical techniques			✓										
CO4:To acquire knowledge about the critical analytical problem and selection of appropriate analytical tool for the quantification of chemicals and excipients.					✓								✓

Table 369: Mapping between COs of MPA202T and (POs& PSOs)

MPA202T:Modern Bio-Analytical Techniques													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To acquire knowledge to conduct bioequivalence study for formulations by utilizing the proper regulatory guidelines			✓	✓									
CO2:To acquire knowledge about both theoretical and practical knowledge on quantification of analyses present in the biological fluids.			✓	✓									

Table 370: Mapping between COs of MPA203T and (POs& PSOs)

MPA203T:Quality Control and Quality Assurance													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To understand the cGMP aspects in a pharmaceutical industry	✓									✓			
CO2:To understand the importance of documentation	✓									✓			
CO3:To understand the scope of quality certifications applicable to pharmaceutical industries	✓									✓			
CO4:To understand the responsibilities of QA and QC department	✓									✓			
CO5:To understand GLP and regulatory affairs	✓									✓			

Table 371: Mapping between COs of MPA204T and (POs& PSOs)

MPA204T:Herbal and Cosmetic Analysis													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To be able to understand various herbal regulations								✓				✓	
CO2:To be able to understand various analytical techniques in the determination of herbal products			✓	✓									
CO3:To be able to understand the herbal monographs			✓										
CO4:To be able to understand various herbal drug interactions			✓				✓				✓		
CO5:To be able to understand various performance evaluation of cosmetic products			✓	✓									

#### 4.3.4 M. Pharm in Pharmaceutics

The following PSOs are defined for the said Program;

- PSO1: **Expertise in the field of Pharmaceutical Sciences-** Understand a core and basic knowledge in different subjects of Pharmaceutical Sciences.
- PSO2: **Service as Pharmacist** - Render the services to the public by providing patient centric effective treatments to curb the therapeutic issues with the required medicines and explain the effects of the drugs by analyzing the scientific literature for improving their health and well-being.
- PSO3: **Invention and Entrepreneurship-** Find the application of modern tools to integrate health care systems, design an effective product with commercial advantage and societal benefit, perform risk analysis and become entrepreneur.
- PSO4: **Pharmaceutical research and development-** Capability of applying the basic principles of Pharmaceutical sciences for drug discovery and formulation development.

Table 372: Mapping between COs of MPH102T and (POs& PSOs)

MPH102T:Drug Delivery Systems													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To know the various approaches for development of novel drug delivery systems					✓								✓
CO2:To know the criteria for selection of drugs and polymers for the development of delivering system	✓									✓			
CO3:To know the formulation and evaluation of novel drug delivery systems	✓									✓			

Table 373: Mapping between COs of MPH103T and (POs& PSOs)

MPH103T:Modern Pharmaceutics													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To know the elements of pre-formulation studies	✓									✓			
CO2:To know the active pharmaceutical ingredients and generic drug product development	✓									✓			
CO3:To know the industrial management and GMP considerations	✓									✓			
CO4:To know the optimization techniques and pilot plant scale up techniques	✓									✓			
CO5:To know the stability testing, sterilization process & packaging of dosage forms	✓									✓			

Table 374: Mapping between COs of MPH104T and (POs& PSOs)

MPH104T:Regulatory Affairs													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To know the concepts of innovator and generic drugs, drug development process	✓									✓			
CO2:To know the regulatory guidance's and guidelines for filing and approval process								✓				✓	
CO3:To know the preparation of dossiers and their submission to regulatory agencies in different countries								✓				✓	
CO4:To know the post approval regulatory requirements for actives and drug products								✓				✓	
CO5:To know the submission of global documents in CTD/ eCTD formats								✓				✓	
CO6:To know the clinical trials requirements for approvals for conducting clinical trials								✓				✓	
CO7:To know the pharmacovigilance and process of monitoring in clinical trials								✓				✓	

Table 375: Mapping between COs of MPH201T and (POs& PSOs)

MPH201T:Molecular Pharmaceutics-NanoTech and targeted DDS													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To know the various approaches for development of novel drug delivery systems.	✓		✓							✓			
CO2:To know the criteria for selection of drugs and polymers for the development of NTDS					✓							✓	
CO3:To know the formulation and evaluation of novel drug delivery systems.					✓							✓	



Table 376: Mapping between COs of MPH202T and (POs& PSOs)

MPH202T:Advanced Biopharmaceutics and pharmacokinetics													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To know the basic concepts in biopharmaceutics and pharmacokinetics	✓									✓			
CO2:To know the use raw data and derive the pharmacokinetic models and parameters the best describe the process of drug absorption, distribution, metabolism and elimination.	✓									✓			
CO3:To know the critical evaluation of biopharmaceutic studies involving drug product equivalency.					✓								✓
CO4:To know the design and evaluation of dosage regimens of the drugs using pharmacokinetic and biopharmaceutic parameters.					✓								✓
CO5:To know the potential clinical pharmacokinetic problems and application of basics of pharmacokinetic					✓								✓

Table 377: Mapping between COs of MPH203T and (POs& PSOs)

MPH203T:Computer Aided drug delivery System													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To know the history of computers in pharmaceutical research and development				✓									
CO2:To know about the computational modeling of drug disposition				✓									
CO3:To know the use of computers in preclinical development				✓									
CO4:To know about the optimization techniques in pharmaceutical formulation				✓									
CO5:To know about the artificial intelligence (AI) and robotics				✓									
CO6:To know about the computational fluid dynamics(CFD)				✓									

Table 378: Mapping between COs of MPH204T and (POs& PSOs)

MPH204T:Cosmetics and Cosmeceuticals													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To know about the key ingredients used in cosmetics and cosmeceuticals.	✓									✓			
CO2:To know about the key building blocks for various formulations.	✓									✓			
CO3:To know about various key ingredients and basic science to develop cosmetics and cosmeceuticals	✓									✓			
CO4:To acquire scientific knowledge to develop cosmetics and with desired Safety, stability, and efficacy.					✓								✓

#### 4.3.5 M. Pharm in Pharmacology

The following PSOs are defined for the said Program;

- PSO1: **Expertise in the field of Pharmaceutical Sciences-** Understand a core and basic knowledge in different subjects of Pharmaceutical Sciences.
- PSO2: **Service as Pharmacist-** Render the services to the public by providing patient centric effective treatments to curb the therapeutic issues with the required medicines and explain the effects of the drugs by analyzing the scientific literature for improving their health and well-being.
- PSO3: **Invention and Entrepreneurship-** Find the application of modern tools to integrate health care systems, design an effective product with commercial advantage and societal benefit, perform risk analysis and become entrepreneur.
- PSO4: **Pharmaceutical research and development-** Capability of applying the basic principles of Pharmaceutical sciences for drug discovery and formulation development.

Table 379: Mapping between COs of MPL102T and (POs& PSOs)

MPL102T:Advanced Pharmacology													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To acquire the basic knowledge in the field of pharmacology pertaining to the drugs and its therapeutic applications	✓									✓			
CO2:To learnt the recent advances in the drugs used for the treatment of various diseases.	✓									✓			
CO3:To understand the concepts of drug action and mechanisms involved.	✓									✓			
CO4:To discuss the pathophysiology and pharmacotherapy of certain diseases	✓									✓			
CO5:To understand the underlying mechanism of drug actions at cellular and molecular level							✓				✓		
CO6:To learn the adverse effects, contraindications and clinical uses of drugs used in treatment of diseases							✓				✓		

Table 380: Mapping between COs of MPL103T and (POs& PSOs)

MPL103T:Pharmacological and Toxicological Screening Methods-I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To acquire knowledge about preclinical evaluation of drugs and recent experimental techniques in the drug discovery and development.					✓								✓
CO2:To understand the maintenance of laboratory animals as per the guidelines, basic knowledge of various in-vitro and in-vivo preclinical evaluation processes	✓							✓		✓			
CO3:To learnt to describe the various animals used in the drug discovery process and good laboratory practices in maintenance and handling of experimental animals					✓			✓					✓
CO4:To acquire knowledge about the various screening methods involved in the drug discovery process					✓								✓
CO5:To correlate the preclinical data to humans		✓			✓								✓

Table 381: Mapping between COs of MPL104T and (POs& PSOs)

MPL104T:Cellular and Molecular Pharmacology													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To acquire the fundamental knowledge on the cellular structures and the interaction of these components with drugs	✓									✓			
CO2:To learn the receptor signal transduction processes	✓									✓			
CO3:To learnt the molecular pathways affected by drugs.	✓									✓			
CO4:To learnt the applicability of molecular pharmacology and biomarkers in drug discovery process.					✓								✓
CO5:To learnt to demonstrate molecular biology techniques as applicable for pharmacology.			✓										

Table 382: Mapping between COs of MPL201T and (POs& PSOs)

MPL201T:Advanced Pharmacology – II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To acquire basic knowledge in the field of pharmacology pertaining to the drugs and its therapeutic applications	✓									✓			
CO2:To learnt the recent advances in the drugs used for the treatment of various diseases.	✓									✓			
CO3:To understand the concepts of drug action and mechanisms involved.	✓									✓			
CO4:To understand the pathophysiology and pharmacotherapy of certain diseases	✓									✓			
CO5:To understand the underlying mechanism of drug actions at cellular and molecular level.							✓				✓		
CO6:To learn the adverse effects, contraindications and clinical uses of drugs used in treatment of diseases							✓				✓		

Table 383: Mapping between COs of MPL202T and (POs& PSOs)

MPH102T:Pharmacological and Toxicological Screening Methods-II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To acquire the knowledge on the preclinical safety and toxicological evaluation of drug and new chemical entity.					✓			✓					✓
CO2:To understanding in the regulatory aspects for the toxicological evaluation of drugs and chemicals.					✓		✓						✓
CO3:To study the various types of toxicity studies and their procedure.			✓										
CO4:To understand the importance of ethical and regulatory requirements for toxicity studies.								✓					
CO5:To acquire the practical skills required to conduct the preclinical toxicity studies.			✓										
CO6:To understand the use of experimental animals for the different toxicological studies.					✓								✓

Table 384: Mapping between COs of MPL203T and (POs& PSOs)

MPL203T:Principles of Drug Discovery													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1:To acquire the knowledge on the basics of drug discovery.					✓								✓
CO2:To understand the various stages of drug discovery.					✓								✓
CO3:To study the importance of the role of genomics, proteomics and bioinformatics in drug discovery.					✓								✓
CO4:To study the various targets for drug discovery.					✓								✓
CO5:To learn the lead seeking method and lead optimization					✓								✓
CO6:To learn the importance of the role of computer aided drug design in drug discovery.					✓								✓

Table 385: Mapping between COs of MPL204T and (POs& PSOs)

MPL204T: Clinical Research and Pharmacovigilance													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PSO1	PSO2	PSO3	PSO4
CO1: To acquire the knowledge on the clinical research.					✓		✓						✓
CO2: To understand the regulatory requirements for conducting clinical trial.					✓		✓						✓
CO3: To understand the types of clinical trial designs.					✓		✓						✓
CO4: To study the responsibilities of key players involved in clinical trials					✓		✓						✓
CO5: To understanding the safety monitoring, reporting and close-out activities.					✓		✓						✓
CO6: To study the principles of Pharmacovigilance					✓		✓						✓

#### 4.3.6 M.Sc in Chemical Biology and Drug Design

Table 386: Mapping between COs of MS 1.1 and POs

MS 1.1 : Basic biological chemistry						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Learn general concepts of biochemistry	✓				✓	
CO2: Understand the basic molecular structures and functional aspects of Proteins, enzymes, lipids, carbohydrates etc.	✓				✓	
CO3: Understand the biochemical reactions occurring inside the body	✓				✓	

Table 387: Mapping between COs of MS 1.2 and POs

MS 1.2: Chemistry of Pharmacology						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Learn general concepts of pharmacology and toxicology	✓				✓	
CO2: Understand the basic pharmacokinetics including physicochemical properties of drugs	✓				✓	
CO3: Understand the pharmacodynamics processes occurring inside the body	✓				✓	

Table 388: Mapping between COs of MS 1.3 and POs

MS 1.3:Experimental Design						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Learn general concepts of Experimental design	✓				✓	
CO2:Understand the basic theory of biostatistics	✓				✓	
CO3:Understand the application of mathematics and statistics in experimental design		✓			✓	✓

Table 389: Mapping between COs of MS 1.4 and POs

MS 1.4:Approaches to Drug Analysis						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Understanding the concept of GLP and method validation			✓		✓	
CO2:To acquire the basic knowledge on assay of pharmaceuticals using various analytical instruments.			✓	✓		
CO3:To expand the theoretical knowledge on various instrumental techniques available for analysis of organic substances				✓	✓	✓

Table 390: Mapping between COs of MS 2.1 and POs

MS 2.1:Drug synthesis						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Learn the concepts of Heterocyclic chemistry	✓				✓	
CO2:Understand the theory and application of Retrosynthesis	✓				✓	
CO3:Learn the concepts of combinatorial Chemistry	✓				✓	

Table 391: Mapping between COs of MS 2.2 and POs

MS 2.2:Genomic and Proteomics						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Learn the theory and concepts of genomics	✓				✓	
CO2:Learn the theory and concepts of proteomics	✓				✓	
CO3:Learn the application of tools and software of genomic and proteomics in drug design			✓	✓	✓	

Table 392: Mapping between COs of MS 2.3 and POs

MS 2.3:Bioinformatics						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Learn the theory and concepts of Bioinformatics Structural databases	✓		✓		✓	
CO2:Learn the theory and concepts of drug discovery and computer-aided drug designing	✓		✓		✓	
CO3:Learn the application of Bioinformatics in the field of drug design			✓	✓	✓	

Table 393: Mapping between COs of MS 2.4 and POs

MS 2.4:Molecular Pharmacology						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:To acquire the fundamental knowledge on the cellular structures and the interaction of these components with drugs	✓					
CO2:To learn the receptor signal transduction processes.	✓					
CO3:To learn the molecular pathways affected by drugs.	✓					
CO4:To learn the applicability of molecular pharmacology and biomarkers in drug discovery process.	✓				✓	
CO5:To learn and demonstrate molecular biology techniques as applicable for pharmacology.	✓		✓			

Table 394: Mapping between COs of MS 3.1 and POs

MS 3.1:Structure based drug design-I						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:To learn about etiology of disease and drug targets	✓				✓	
CO2:To learn about the role of proteins as drug targets	✓				✓	
CO3:To learn about the application of Structure based drug design	✓				✓	



Table 395: Mapping between COs of MS 3.2 and POs

MS 3.2:Structure based drug design-II						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:To learn about the design and discovery of lead molecules	✓				✓	
CO2:To learn about the role of drug design in drug discovery process	✓				✓	
CO3:To learn about the concept of QSAR and docking	✓				✓	
CO4:To learn about the various strategies to develop new drug like molecules	✓				✓	

Table 396: Mapping between COs of MS 3.3 and POs

MS 3.3:Preclinical Evaluation of drugs						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:To acquire knowledge about preclinical evaluation of drugs and recent experimental techniques in the drug discovery and development.	✓				✓	
CO2:To acquire knowledge about the various screening methods involved in the drug discovery process	✓				✓	
CO3:To correlate the preclinical data to humans	✓				✓	
CO4:Understand the functions of ethics in medical research and the guidelines for the experimentation on animals	✓				✓	

Table 397: Mapping between COs of MS 3.4 and POs

MS 3.4:Drug regulatory affairs and IPR						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:To know the regulatory guidance's and guidelines for filing and approval process				✓	✓	
CO2:To know the preparation of dossiers and their submission to regulatory agencies in different countries				✓	✓	
CO3:To know the post approval regulatory requirements for actives and drug products				✓	✓	
CO4:To know the submission of global documents in CTD/ eCTD formats				✓	✓	
CO5:To know the regulatory guidelines for drug and drug products, patent, trade mark etc.				✓	✓	

## 5 Management Studies

### 5.1 POs & PSOs for Master of Business Administration

The following POs are defined in line with the accredited body like NBA/ Washington Accord for Master of Business Administration (MBA) Program

- PO1. **Management Knowledge:** Acquire knowledge and skills in management and ability to apply its principles and practices to arrive at optimal solution for any corporate problems.
- PO2. **Problem Thinking and analysis:** Demonstrate critical thinking skills in understanding managerial issues and problems by collecting and analyzing data.
- PO3. **Design and Development of solutions:** Design solutions for management problems by applying the contemporary methods in management sciences to enhance organizational efficiency and to find innovative business solutions.
- PO4. **Behavioral skills:** Improve the verbal and non-verbal communication skills and acquire leadership skill and team work capabilities through participation. Demonstrate hands-on experience in administration and research.
- PO5. **Ethics:** Apply ethical principles and understand the impact of the professional management solutions in societal and environmental contexts.
- PO6. **Entrepreneurial Perspective:** To identify business opportunities and acquire entrepreneurial traits to evaluate and manage their own business successfully.
- PO7. **Global Perspective:** Students should be able to demonstrate their ability to analyze and evaluate the political, economical, social, legal and technological global environment.
- PO8. **Life-long learning:** Ability to engage in independent and life-long learning in the context of managing unpredictable societal and global issues.
- PO9. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO10. **Functional business knowledge of Different areas:** Employ Functional decision models to select appropriate projects for a business enterprise and manage firm growth through strategies such as mergers, acquisitions, international expansion, and new venture development.

- PO11. **Social, legal and ethical responsibilities of organizations and society:** Demonstrate awareness of economic, environmental, political, legal, and regulatory contexts of global business practice Understand, analyze, and apply ethics frameworks to corporate social responsibility and ethical decision making.

The following PSOs are defined for MBA Program

PSO1. **Core Courses:**

1. To apply the elementary knowledge of management sciences to optimally solve the complex business problems.
2. To gain knowledge from Summer internship Project in the industry as per the requirement of the organization.
3. To express the practice of professional ethics and standards for societal and environmental well-being.

PSO2. **Elective Courses:** To inculcate in students the ability to gain multidisciplinary knowledge through simulated problems, case analysis, projects and Summer Internship Training .

PSO3. **Seminar and Workshop:** Periodic workshops and seminars are being arranged for students consistently throughout the course for better understanding of the subject knowledge and also to equip them with requisite skills of the industry.

## **5.2 POs & PSOs for Bachelor of Business Administration**

The following POs are defined in line with the accredited body like NBA/ Washington Accord for Bachelor of Business Administration (BBA) Program

- PO1. Identify the different functional aspects of business world and recognize different opportunities of business.
- PO2. Acquire the different skills necessary for the professional attitudes.
- PO3. Demonstrate a global outlook with the ability to identify aspects of the global business and cross cultural understanding.
- PO4. Identify the problems and challenges and inculcate the capability to cope with the spontaneous changes.
- PO5. Analyze the importance of innovation and research, tackle the contemporary needs and accordingly grab the opportunities.
- PO6. Develop effective and oral communication especially in business applications, with the use of appropriate technology.

- PO7. Collaborate and lead teams across organizational boundaries and demonstrate leadership qualities, maximize the uses of diverse skills of team members in the related context.
- PO8. Develop effective communication especially in business applications, with the use of appropriate technology.

The following PSOs are defined for BBA Program

- PSO1. Acquire the managerial professional attributes and be capable of decision making by applying the knowledge of management discipline.
- PSO2. Explore the entrepreneurial quality and start new business venture with innovative ideas.
- PSO3. Prepare students to undertake post-graduation management programme.

### **5.3 POs & PSOs for MBA in Hospital Administration**

The following POs are defined in line with the accredited body like NBA/ Washington Accord for MBA in Hospital Administration (MHA) Program

- PO1. **Management Knowledge:** Acquire knowledge and skills in management and ability to apply its principles and practices to arrive at optimal solution health care related problems.
- PO2. **Problem Thinking and analysis:** Demonstrate critical thinking skills in understanding managerial issues and problems by collecting and analyzing data in hospitals.
- PO3. **Design and Development of solutions:** Design solutions for patient management problems by applying the contemporary methods in health care to enhance hospital efficiency and to find innovative patient care solutions for better patient care improvement.
- PO4. **Behavioral skills:** Improve the verbal and non-verbal communication skills and acquire leadership skill and team work capabilities through participation. Demonstrate hands-on experience in administration and research.
- PO5. **Ethics:** Apply ethical principles and understand the impact of the professional management solutions in societal and environmental contexts related to hospitals.
- PO6. **Entrepreneurial Perspective:** To identify business opportunities and acquire entrepreneurial traits to evaluate and manage their own business successfully.

- PO7. **Global Perspective:**Students should be able to demonstrate their ability to analyze and evaluate the political, economical, social, legal and technological global health care environment.
- PO8. **Life-long learning:**Ability to engage in independent and life-long learning in the context of managing unpredictable societal and global issues related to health-care.
- PO9. **Communication:**Communicate effectively on hospital related activities with the health care community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO10. **Functional business knowledge of Different areas:** Evaluate the threats, vulnerabilities, and importance of physical and information security in the healthcare industry.
- PO11. **Social, legal and ethical responsibilities of organizations and society:** Demonstrate Evaluate ethical and legal issues relevant to the policies, practices, and management of healthcare delivery in a competitive environment.

The following PSOs are defined for MHA Program

- PSO1. Managerial decision making through the application of knowledge of management discipline in hospitals
- PSO2. Set up business enterprise related to health care and manage diversified growth of entrepreneurship in hospital sector.
- PSO3. Analyze the responsibility and operations of a healthcare organization in patient care outcomes and business performance.

## 5.4 Mapping of CO Vs POs

### 5.4.1 MBA

Table 398: Mapping between COs of MSC-101 and (POs& PSOs)

MSC-101:Micro Economics for Managers														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To familiarize the students with basic theories and tools of analysis for understanding the behavior of various economic agents.	✓		✓		✓	✓			✓		✓	✓	✓	✓
CO2:To acquaint the students with the application of various economic theories and concepts in managerial decision-making.			✓				✓				✓		✓	

Table 399: Mapping between COs of MSC-102 and (POs& PSOs)

MSC-102:Quantitative Techniques														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To familiarize students with the quantitative methods essential for management decision making.		✓		✓	✓						✓		✓	
CO2:To equip the students with quantitative techniques for complex problem solving in business.		✓							✓					

Table 400: Mapping between COs of MSC-103 and (POs& PSOs)

MSC-103:Marketing Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To introduce the basic concepts and practices of modern marketing as applied in various situations by product and service organizations.	✓		✓			✓		✓			✓			✓
CO2:To highlight the fundamentals of marketing mix element decisions.									✓					

Table 401: Mapping between COs of MSC-104 and (POs& PSOs)

MSC-104:Financial Reporting & Analysis														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To understand and independently read financial statements of corporations		✓		✓		✓	✓				✓	✓		
CO2:To analyze financial statements so that participants can judge the financial health of a firm						✓	✓		✓					

Table 402: Mapping between COs of MSC-105 and (POs& PSOs)

MSC-105:Micro Organisational Behaviour														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To acquaint students with an understanding of the various concepts and complexities of human behavior in Organizational setup.	✓		✓	✓			✓					✓		
CO2:To make students realize the importance of individual behavior in determining managerial effectiveness in particular and Organizational effectiveness in general.						✓			✓					

Table 403: Mapping between COs of MSC-106 and (POs& PSOs)

MSC-106:Communication and Soft Skill Development														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To acquire the basic written, oral and interpersonal communication skills in order to thrive in a competitive corporate world.		✓		✓								✓		
CO2:To inculcate the basic soft skills needed for a manager to succeed at workplace.	✓		✓		✓	✓							✓	✓

Table 404: Mapping between COs of MSC-201 and (POs& PSOs)

MSC-201:Macro Economics and Business Environment														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To provide the students with a basic knowledge of essential macro-economic theories and policies so as to understand the national and global business environments for the purpose of decision making.								✓		✓				
CO2:To help in managerial decision making and in the formulation of long-term strategies in the present economic scenario.		✓	✓	✓	✓						✓		✓	

Table 405: Mapping between COs of MSC-202 and (POs& PSOs)

MSC-202:Operation Research														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To familiarize the students with the knowledge of formulating mathematical models for solving managerial problems through effective utilization of available resources									✓					
CO2:To imparts skills in the use of various Operations Research Models in solving real problems in industry	✓		✓		✓	✓					✓	✓		✓



Table 406: Mapping between COs of MSC-203 and (POs& PSOs)

MSC-203:Marketing Strategy and Decision														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To learn how to develop effective marketing strategies to achieve organizational objectives assessing market opportunities.							✓							
CO2:To understand the key concepts of consumer psychology forming the basis of marketing strategy formulation.		✓		✓		✓			✓			✓		

Table 407: Mapping between COs of MSC-204 and (POs& PSOs)

MSC204:Management Information System														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To provide an understanding how to use and manage information technologies to revitalize business processes, improve business decision making and gain competitive advantage.				✓			✓			✓			✓	
CO2:To focus on best practices, tools and models to implement an effective IS management system and provides insights on how to develop and implement enterprise-wide IT strategies, initiatives and programs	✓		✓									✓		

Table 408: Mapping between COs of MSC-205 and (POs& PSOs)

MSC-205:Macro Organizational Behavior														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To expose the students to determine the best overall macro structure for the organisation and its subcomponents through organisational planning and design.								✓			✓			
CO2:To emphasize the specific skills to understand the complexities of macro organisational system with respect to power, politics and the effect of organisational culture on the external world.		✓		✓										

Table 409: Mapping between COs of MSC-206 and (POs& PSOs)

MSC-206:Corporate Finance: Capital Structure & Financing Decisions														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To enable the students to acquire basic understanding of the structure, organization and functioning of the Financial System in India.	✓		✓			✓							✓	✓
CO2:To provide an in-depth examination of how a sound capital structure simultaneously minimizes the firm's cost of capital and maximizes the value to shareholders.						✓			✓		✓			✓

Table 410: Mapping between COs of MSC-207 and (POs& PSOs)

MSC-207:Cost Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To acquaint the students with the cost management techniques for evaluation, analysis and application in managerial decision making		✓			✓				✓	✓	✓		✓	

Table 411: Mapping between COs of MSC-301 and (POs& PSOs)

MSC-301:Operations Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To acquaint the students with decision making in planning, scheduling and control of production and operations functions.	✓		✓				✓	✓						✓
CO2:To familiarize the students in manufacturing and service organizations and its improvement through quality management.														

Table 412: Mapping between COs of MSC-302 and (POs& PSOs)

MSC-302:Strategic Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To impart knowledge for solving complex business problems and developing innovative strategies for exploring new avenues.		✓		✓		✓						✓		
CO2:To develop strategic skill for shouldering responsibilities for future corporate leaders.							✓	✓	✓					

Table 413: Mapping between COs of MSC-303 and (POs& PSOs)

MSC-303:Research Methods for Business Decision														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To equip the students with fundamentals of research methods	✓		✓		✓							✓		
CO2:To provide an insight into the application of modern analytical tools and techniques for the purpose of business decision making.			✓			✓		✓			✓			

Table 414: Mapping between COs of MSC-304 and (POs& PSOs)

MSC-304:Corporate Finance: Investment & Dividend Decisions														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To acquaint the students with the various sources and application of finance		✓		✓						✓		✓		✓
CO2:To provide insight into the considerations in the formulation of dividend policy and acquaint with contemporary corporate finance practice and market trends evolving in different countries.	✓		✓			✓		✓	✓				✓	✓

Table 415: Mapping between COs of MSC-305 and (POs& PSOs)

MSC-305:Human Resource Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To sensitize the students to the various facets of human recourse management, to create an understanding of the intricacies of HR policies and its benefits.					✓		✓	✓						
CO2:To facilitate the learning of various concepts and skills required for utilization and development of human resource.		✓			✓								✓	

Table 416: Mapping between COs of MSC-306 and (POs& PSOs)

MSC-306:Business Law														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To provide students with good exposure to the legal aspects of business to enable them to face business world.											✓			
CO2:To familiarize the students with various corporate laws and make them conversant with the legal dimension of business.	✓		✓				✓		✓	✓				✓

Table 417: Mapping between COs of MSM-401 and (POs& PSOs)

MSM-401:Consumer Behaviour														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To understand the strategic implications of consumer influences and decisions for product, advertising, pricing, and distribution strategies.	✓		✓				✓							
CO2:To analyze consumers behaviour and personal and environmental factors that influence consumer decisions which helps in designing marketing strategies		✓		✓				✓	✓	✓	✓			

Table 418: Mapping between COs of MSM-402 and (POs& PSOs)

MSM-402:Integrated Marketing Communication														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To enable students to build a sound theoretical and practical understanding of the formulation of promotional strategy and the management of the marketing communication process.	✓		✓			✓							✓	✓
CO2:To develop an understanding of the economic and creative justifications for marketing communications and to be sensitive to legal and ethical considerations in the formulation and the implementation of marketing communications strategy.										✓	✓			

Table 419: Mapping between COs of MSM-403 and (POs& PSOs)

MSM-403:Sales and Distribution Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To provide an understanding of the concepts, attitudes, techniques and approaches required for effective decision making in the areas of Sales		✓			✓			✓					✓	
CO2:To develop skills for generating, evaluating and selecting distribution strategies.											✓			

Table 420: Mapping between COs of MSM-404 and (POs& PSOs)

MSM-404:Rural Marketing														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To explore the students to Rural Marketing environment so that they can understand consumer's and marketing characteristics of the same for understanding and contributing to the emerging challenges in the upcoming economic scenario.	✓			✓				✓	✓	✓				✓
CO2:To identify the problems associated with rural marketing and also the strategies that can be successfully adopted.		✓					✓					✓	✓	

Table 421: Mapping between COs of MSM-405 and (POs& PSOs)

MSM-405:Marketing Research														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To give the students an understanding of marketing research from both user's (management) and doer's (the researchers) perspective.												✓		
CO2:To focus on the practice of marketing research in real life situations taking the help of multivariate statistical analysis.	✓		✓		✓						✓		✓	✓

Table 422: Mapping between COs of MSM-406 and (POs& PSOs)

MSM-406:Marketing in Practice														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To provide a practical exposure in the marketing area							✓					✓		
CO2:To ensure the illustration of application of marketing theories in practice through lectures by practitioners, field study and computer based simulation game (Markstrat 3.10)		✓									✓			

Table 423: Mapping between COs of MSM-407 and (POs& PSOs)

MSM-407:International Marketing														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To expose the students to global marketing mix.										✓		✓	✓	
CO2:To generate awareness about export procedure, documentation and government assistance to exporters.	✓		✓										✓	

Table 424: Mapping between COs of MSF-401 and (POs& PSOs)

MSF-401:Investment Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To develop an understanding of market equilibrium and portfolio theory that will serve as a powerful tool successful investing.		✓			✓		✓	✓						
CO2:To develop an understanding of market efficiency and portfolio evaluation.												✓		✓

Table 425: Mapping between COs of MSF-402 and (POs& PSOs)

MSF-402:Financial Market & Services														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To familiarize the students with the dynamics of financial market, financial instruments and financial services.	✓			✓										
CO2:To provide the students the basic operational practices of financial markets and services												✓		

Table 426: Mapping between COs of MSF-403 and (POs& PSOs)

MSF-403:Fixed Income Markets														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To enable the students to understand the tools and techniques of management of fixed income market and its financial institutions.		✓				✓		✓	✓					
CO2:To familiarize the students with the concept of bond management and other fixed income securities												✓		



Table 427: Mapping between COs of MSF-404 and (POs& PSOs)

MSF-404:Bank Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To provide operational knowledge on various aspects of Commercial Banking functions in India.	✓		✓		✓						✓			
CO2:To impart practical knowledge on credit appraisal system of commercial banks.	✓		✓		✓						✓			✓

Table 428: Mapping between COs of MSF-405 and (POs& PSOs)

MSF-405:Business Valuation Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To enable the students to understand the basics of valuation of business.		✓			✓				✓		✓		✓	✓
CO2:The main emphasis of this course will be on approaches on valuation models which is highly essential for crucial financial decisions. It will make the students realize how the appropriate valuation of assets, liabilities and business itself has positive impact on reconstruction of business structure and form.	✓		✓		✓						✓			✓

Table 429: Mapping between COs of MSF-406 and (POs& PSOs)

MSF-406:Tax Management & Practices														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To familiarize the students with the direct and indirect tax laws in force and relevant rules and practices.	✓		✓				✓	✓	✓				✓	
CO2:To provide an insight into practical aspect for an efficient corporate tax management.	✓		✓			✓			✓		✓			✓

Table 430: Mapping between COs of MSF-407 and (POs& PSOs)

MSF-407:Behavioural Finance														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To identify the behavioral factors that systematically influences financial markets and corporations.				✓		✓	✓		✓	✓		✓	✓	
CO2:To determine the properties and characteristics of empirical data pointing to the presence of behavioral phenomena.		✓			✓						✓	✓		

Table 431: Mapping between COs of MSH-401 and (POs& PSOs)

MSH-401:Human Resource Planning														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To develop the analytical abilities for understanding the implications changes in the manpower situation of the company and the availability of human resource within the organization and outside	✓		✓		✓						✓			✓
CO2:To impart knowledge in manpower planning and development activities.	✓		✓			✓		✓			✓	✓		

Table 432: Mapping between COs of MSH-402 and (POs& PSOs)

MSH-402:Industrial Relations & Labour Legislations														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To impart knowledge of the contents of the industrial relations and labour laws, and expose the students to the interpretations.			✓				✓		✓		✓	✓		✓
CO2:To stimulate the thinking on rationale behind the laws and their enforcement problems.		✓		✓		✓					✓			

Table 433: Mapping between COs of MSH-403 and (POs& PSOs)

MSH403:-International HRM														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To explore international dimensions of the core aspects of human resource management.		✓		✓	✓		✓	✓		✓	✓		✓	✓
CO2:To understand the dynamics of national culture and international environment affecting business.	✓		✓				✓							

Table 434: Mapping between COs of MSH-404 and (POs& PSOs)

MSH-404:Design of Organisation														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To understand the dynamics of organization through specific design									✓				✓	
CO2:To familiarize the students with inter-organisational relationships and its application		✓		✓										

Table 435: Mapping between COs of MSH-405 and (POs& PSOs)

MSH-405:Leadership Theory & Practices														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To familiarize the students with various leadership styles and prepare them to lead effectively in the new millennium.	✓		✓		✓	✓						✓		✓
CO2:To develop the students to be effective corporate leaders.	✓		✓	✓		✓	✓	✓		✓				

Table 436: Mapping between COs of MSH-406 and (POs& PSOs)

MSH-406:HRM in Service Industry														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To enhance participants' understanding of the nature of service work from product manufacturing work.		✓			✓						✓	✓		
CO2:To understand HRM strategy, policies, and practices supporting the services management and work.								✓						

Table 437: Mapping between COs of MSI-401 and (POs& PSOs)

MSI-401: E-Commerce														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To introduce students to the new technologies, applications, services and business models of E-Commerce.	✓		✓				✓					✓		
CO2:To familiarize the students with EDI, EPS and various security aspects pertaining to E-Commerce.				✓				✓		✓		✓		

Table 438: Mapping between COs of MSI-402 and (POs& PSOs)

MSI-402:Relational Data Base Management Systems														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:The basic objective of the course is to make conversant with the large databases, customized creation and storage of data in databases.		✓		✓		✓			✓					
CO2:Optimization in the process of data retrieval through customized query processes, the various concepts and models used in the database applications and the various types of high-end databases applications like Oracle operations for storage and retrieval of data.		✓		✓	✓		✓	✓		✓			✓	✓

Table 439: Mapping between COs of MSI-403 and (POs& PSOs)

MSI-403:Information System Analysis and Design														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To teach techniques and approaches to students so that they may analyze and develop business systems more effectively and efficiently.	✓		✓					✓			✓			
CO2:The objective of the course is to familiarize the students with the various concepts of system analysis, design and planning.								✓			✓		✓	

Table 440: Mapping between COs of MSI-404 and (POs& PSOs)

MSI-404:Object Oriented Programming using Java														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To introduce the students to the basic concepts of Java Language and helps students to improve their programming skills in order to develop a complete Java application.		✓		✓										
CO2:To familiarize the students with the programming with JAVA and its applications.	✓		✓			✓	✓		✓			✓		✓

Table 441: Mapping between COs of MSI-405 and (POs& PSOs)

MSI-405:Information System Control and Audit														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:It enables the student understand the concepts of Information System and Control.	✓		✓	✓		✓	✓		✓	✓		✓		
CO2:The student understands the audit standards, Audit Process, Computer assistance Audit tools, Managing Audit tools and Strategy and Standards for Auditing		✓			✓				✓	✓	✓	✓		

Table 442: Mapping between COs of MSI-406 and (POs& PSOs)

MSI-406:Business Intelligence and Analytics														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To make the students proficient in the tools and techniques of Business Intelligence making use of Data mining and Data Warehousing processes.	✓		✓					✓						
CO2:To identify key components of Business Intelligence tool sets. Differentiate between Business Intelligence tools and practices and other legacy/emerging technologies.				✓			✓					✓		

Table 443: Mapping between COs of MSO-401 and (POs& PSOs)

MSO-401:Supply Chain Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To enable the students to appreciate the significance of supply chain management in highly competitive global economy and to introduce various principles, concepts.		✓		✓		✓								
CO2:To envisage that students would gain a conceptual understanding of the subject and relate them to practical applications in real life situation		✓		✓	✓		✓	✓		✓	✓			

Table 444: Mapping between COs of MSO-401 and (POs& PSOs)

MSO-401:Project Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To acquaint students with planning, effective implementation and execution of project.	✓		✓										✓	✓
CO2:To achieve management of time, cost and performance of the project.											✓			

Table 445: Mapping between COs of MSO-402 and (POs& PSOs)

MSO-402:Total Quality Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To understand the Total Quality Management concept and principles and the various tools available to achieve Total Quality Management.		✓		✓									✓	
CO2:To create awareness about the ISO certification process and its need for the industries.	✓		✓			✓		✓	✓					✓

Table 446: Mapping between COs of MSO-403 and (POs& PSOs)

MSO-403:Forecasting Methods														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To introduce the student to the basics of quantitative methods and their application to real business situations as well as the use of current software available for forecasting			✓		✓								✓	
CO2:To enable the students to apply different forecasting techniques to empirically test economic theories, conduct business policy analysis and professionally present the results of their analysis		✓			✓									

Table 447: Mapping between COs of MSO-404 and (POs& PSOs)

MSO-404:Production Planning and Control System														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To familiarize students about the various components and functions of production planning.				✓			✓		✓			✓		✓
CO2:To acquaint the students with the control system, product planning, process planning and production scheduling.	✓		✓				✓		✓	✓				

Table 448: Mapping between COs of MSO-405 and (POs& PSOs)

MSO-405:Material Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To familiarize students about the efficient and effective management of materials to achieve higher productivity in manufacturing organizations.												✓		
CO2:To acquaint the students with the physical distribution system of materials and its evaluation.		✓		✓		✓	✓		✓	✓				

Table 449: Mapping between COs of MSM-501 and (POs& PSOs)

MSM-501:Service Marketing														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To have an in-depth knowledge about emerging trends in service sector and the strategies adopted in the management of services.						✓		✓	✓		✓	✓	✓	
CO2:To study different types of marketing strategies in service sector for the survival in the competition.	✓		✓			✓				✓				

Table 450: Mapping between COs of MSM-502 and (POs& PSOs)

MSM-502:Retailing Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To enable the students to learn the basics in retailing, evolution and trends in retailing.	✓		✓		✓						✓			✓
CO2:To have an understanding of the features of retailing, an analysis of the retail environment and exposures to issues and developments in the industry.		✓		✓				✓	✓	✓			✓	✓



Table 451: Mapping between COs of MSM-503 and (POs& PSOs)

MSM-503:Digital Marketing and Electronic Commerce														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To examine timely concerns at the intersection of marketing and internet technology	✓		✓			✓	✓		✓	✓				
CO2:To have an idea about increasing customer value through digital media	✓		✓	✓		✓	✓			✓			✓	

Table 452: Mapping between COs of MSM-504 and (POs& PSOs)

MSM-504:Product and Brand Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To equip students with the knowledge and experience to understand and make decision on product design.		✓	✓	✓	✓			✓						✓
CO2:To enable the students to get an insight on branding and branding strategies used in product decision making.	✓		✓		✓						✓			✓

Table 453: Mapping between COs of MSM-505 and (POs& PSOs)

MSM-505:Agribusiness Marketing														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To have an idea about the application of marketing concepts and economic principles in decision making activities of contemporary agribusiness firms	✓			✓				✓	✓	✓		✓	✓	✓
CO2:To know about key operational strategies and monitoring actions in agribusiness.		✓			✓		✓							

Table 454: Mapping between COs of MSM-506 and (POs& PSOs)

MSM-506:Customer Relationship Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To make the students gain an understanding of key concepts, technologies and best practices of CRM and develop a CRM plan for the implementation of a personal CRM strategy.					✓				✓	✓		✓		
CO2:To familiarize the students with different CRM technology solutions and CRM strategies in Sales, Marketing and Customer Service contexts.	✓		✓		✓	✓		✓	✓		✓		✓	

Table 455: Mapping between COs of MSM-507 and (POs& PSOs)

MSM-507:B2B Marketing														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To familiarize students with the concept of B2B and analyze how companies operate in business-to-business markets.	✓		✓	✓		✓	✓		✓	✓				
CO2:To identify critical elements of value offerings in business markets and apply models and methods for design of marketing strategies in a business-to-business context.		✓									✓		✓	✓

Table 456: Mapping between COs of MSF-501 and (POs& PSOs)

MSF-501:Financial Derivatives														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To acquaint the students with the principles and practices of derivative instruments and their use in treasury and portfolio risk management.					✓					✓				
CO2:To develop the skill of students for managing risk through derivative instruments.	✓		✓									✓		✓

Table 457: Mapping between COs of MSF-502 and (POs& PSOs)

MSF-502:International Finance														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To study the nature and functioning of foreign exchange markets, determination of exchange rates and interest rates.		✓			✓		✓	✓						
CO2:To define and measure foreign exchange risks and to identify risk management strategies.		✓		✓	✓		✓	✓		✓		✓		

Table 458: Mapping between COs of MSF-503 and (POs& PSOs)

MSF-503:Corporate Restructuring														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To enable the students to deal with the valuation principles and acquaint them with nitty gritty of corporate valuation.	✓			✓										
CO2:To sensitize students to deal with the most current subject in-depth and to inter-link the subject of finance with the major strategic decisions of a proactive firm on restructuring.												✓	✓	

Table 459: Mapping between COs of MSF-504 and (POs& PSOs)

MSF-504:Advanced Cost Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:The main objective of this course is to understand the various techniques of cost management in the fast changing dynamics of business environment.		✓				✓		✓	✓					
CO2:To familiarize the students with recent developments in Cost Management Tools.	✓		✓		✓						✓			✓

Table 460: Mapping between COs of MSF-505 and (POs& PSOs)

MSF-505:Risk Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To analyze the risk management of a company through various techniques and will equip them to understand the risk-return trade-off.	✓		✓		✓						✓		✓	✓
CO2:To acquaint the students with various types of risks and risk reduction techniques	✓		✓	✓		✓	✓		✓					

Table 461: Mapping between COs of MSF-506 and (POs& PSOs)

MSF-506:Infrastructure and Project Finance														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To acquaint the students with the concept of project finance and Infrastructure projects.		✓			✓				✓		✓		✓	
CO2:To impart practical knowledge on managing various risks associated with infrastructure and project finance.			✓				✓			✓		✓		✓

Table 462: Mapping between COs of MSF-507 and (POs& PSOs)

MSF-507:Financial Engineering														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To impart knowledge about Financial Innovations in Indian Financial System, Risk management and investment decision making.	✓		✓				✓	✓	✓					
CO2:To improving skills in investment analysis and developing new financial instruments.	✓		✓			✓			✓		✓	✓		

Table 463: Mapping between COs of MSH-501 and (POs& PSOs)

MSH-501:Performance Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To equip students with comprehensive knowledge of performance management.	✓		✓	✓		✓	✓		✓	✓				
CO2:To improve the ability and practical skills of students for managing performance of the employees in their future organizations.		✓			✓						✓	✓	✓	

Table 464: Mapping between COs of MSH-502 and (POs& PSOs)

MSH-502:Compensation & Reward management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To promote understanding of issues relating to the compensation or rewarding human resources in organizations					✓						✓		✓	✓
CO2:To create an understanding of the various policies and practices of human relations management.	✓		✓			✓		✓			✓			

Table 465: Mapping between COs of MSH-503 and (POs& PSOs)

MSH-503:Organisational Change & Development														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To provide the basic foundation in managing and driving organisation change and Development in various organisations.					✓			✓		✓			✓	✓
CO2:To enable students to diagnose organisational system issues, understand change requirements, and apply appropriate change and developmental interventions..		✓		✓		✓					✓			

Table 466: Mapping between COs of MSH-504 and (POs& PSOs)

MSH-504:Human Resource Development														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To provide in depth knowledge of concepts, principles, and strategies of HRD	✓		✓	✓		✓	✓	✓			✓		✓	
CO2:To provide practical understanding of process of Human Resource Development		✓		✓				✓			✓			✓

Table 467: Mapping between COs of MSH-505 and (POs& PSOs)

MSH-505:Strategic Human Resource Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To provide linkages of Business Strategy to HR Strategies, Policies and Systems				✓	✓				✓			✓		
CO2:To equip the student with the tools and techniques essential as a strategic contribution of HRM to organizational success.		✓		✓			✓		✓			✓	✓	✓

Table 468: Mapping between COs of MSH-506 and (POs& PSOs)

MSH-506:Management of Self and Others														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To increase self awareness among the future managers for managerial effectiveness.	✓		✓		✓	✓								
CO2:To emphasize the interpersonal skills that makes managers to work in the team for organisational effectiveness.	✓		✓	✓		✓	✓		✓	✓		✓		✓

Table 469: Mapping between COs of MSI-501 and (POs& PSOs)

MSI-501:Business Process Reengineering & Enterprise Resource Planning														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To prepare students for the new school of thought which is a shift from efficient to effective, passive to active, tactical to strategic and automation to optimization.		✓			✓		✓				✓			
CO2:To prepare students for a radical rethinking on the way the business is run and bring the best out of the organization.									✓			✓		

Table 470: Mapping between COs of MSI-502 and (POs& PSOs)

MSI-502:Decision Support Systems														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To introduce concepts, methods, applications of decision modeling to address various business issues.	✓		✓		✓						✓			
CO2:To provide with an understanding of the key technical and managerial issues in the effective development and use of decision support systems in organisations.							✓					✓	✓	

Table 471: Mapping between COs of MSI-503 and (POs& PSOs)

MSI-503:Information Technology and E-governance														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To help students to learn how IT will change the way public administration performs its tasks.		✓		✓	✓	✓			✓			✓		
CO2:To equip students to understand how to manage public affairs for the benefit of the citizens by adopting E-Government technologies in public service delivery.		✓		✓	✓		✓	✓		✓	✓	✓		

Table 472: Mapping between COs of MSI-504 and (POs& PSOs)

MSI-504:Information Security in Business														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To study the critical need for ensuring Information Security in Organisations.	✓		✓				✓		✓				✓	✓
CO2:To help students understand the basics of Information Security along with the legal, ethical and professional issues in Information Security.					✓			✓			✓			

Table 473: Mapping between COs of MSI-505 and (POs& PSOs)

MSI-505:Cloud Computing														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To introduce the students to the basic concepts of cloud computing and different cloud computing models.		✓		✓									✓	
CO2:To familiarize the students with the development of cloud applications in solving real world problems.	✓		✓			✓	✓		✓	✓				✓



Table 474: Mapping between COs of MSI-506 and (POs& PSOs)

MSI-506:Mobile Computing with Android														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To understand the technical aspects of M-computing	✓		✓	✓		✓	✓		✓	✓				
CO2:To appreciate impact of M-Computing on Information Technology scenario and M-Computing applications and initiate new applications.		✓			✓				✓	✓	✓	✓	✓	✓

Table 475: Mapping between COs of MSO-501 and (POs& PSOs)

MSO-501:Service Operations Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To create an understanding of service system and its commonalities and distinctions from a manufacturing system.	✓		✓				✓	✓						
CO2:To understand the various classes of service systems and the operating processes of service systems.										✓		✓		

Table 476: Mapping between COs of MSO-502 and (POs& PSOs)

MSO-502:Entrepreneurial Decision Making														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To understand the decision making processes of the entrepreneurs, the constraints involved in the decision making process.		✓		✓		✓	✓		✓	✓		✓		✓
CO2:To know the environmental factors influence on the decision making process.		✓		✓	✓		✓	✓			✓			

Table 477: Mapping between COs of MSO-503 and (POs& PSOs)

MSO-503:Strategic Sourcing														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To understand the decision making processes of the entrepreneurs, the constraints involved in the decision making process.	✓		✓									✓		
CO2:To know the environmental factors influence on the decision making process.							✓				✓			

Table 478: Mapping between COs of MSO-504 and (POs& PSOs)

MSO-504:Technology Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To acquaint the students with techniques for improving the flexibility and originality of their thinking and exploring approaches used by managers and organizations to create and sustain high levels of innovation.		✓		✓								✓	✓	
CO2:To make the students familiar with creative and innovative thinking styles.	✓		✓			✓		✓	✓					

Table 479: Mapping between COs of MSO-505 and (POs& PSOs)

MSO-505:Infrastructure Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To acquaint the students with the roles and workings of infrastructure.											✓	✓		
CO2:To familiarize the students with the analytical tools required to plan and manage infrastructure systems, issues and methods of analysis.		✓			✓	✓			✓				✓	✓

Table 480: Mapping between COs of MSO-506 and (POs& PSOs)

MSO-506:World Class Manufacturing														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To acquaint the students with manufacturing competitiveness across the globe.	✓		✓		✓						✓			✓
CO2:To familiarize the students with the tools used for process improvement in respect of world class quality management.	✓		✓				✓		✓	✓	✓		✓	

Table 481: Mapping between COs of MSC-601 and (POs& PSOs)

MSC-601:Business Ethics and Corporate Governance														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To acquaint students to understand the basis of ethics and its application in different functional areas of management	✓		✓	✓		✓	✓							✓
CO2:To enable the students to know the ethics in national and global environment and corporate governance practices in business management context.		✓		✓		✓								

Table 482: Mapping between COs of MSC-602 and (POs& PSOs)

MSC-602:International Business														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To give a broad exposure to students in international the recent trends in business.								✓		✓		✓	✓	✓
CO2:To equip the students to solve complex business problems in overseas market.	✓		✓			✓				✓				

## 5.4.2 BBA

Table 483: Mapping between COs of BBA-101 and (POs& PSOs)

BBA-101:Fundamentals of Management											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:The course aims at providing fundamental knowledge and exposure to the concepts, theories and practices in the field of management.	✓		✓	✓			✓		✓		
CO2:Candidate can apply implement managerial knowledge to perform his task of business management.						✓					

Table 484: Mapping between COs of BBA-102 and (POs& PSOs)

BBA-102:Business Mathematics											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:This course aims at equipping student with a broad based knowledge of, mathematics with emphasis on business applications.		✓		✓					✓		
CO2:To develop analytical skill in problem solving.	✓		✓		✓	✓				✓	✓

Table 485: Mapping between COs of BBA-103 and (POs& PSOs)

BBA-103:Micro Economics											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:The objective of this subject is to give understanding of the basic concepts and issues in micro economics and their application in business decisions.								✓			
CO2:Candidate can apply implement managerial knowledge to perform his task of business management.		✓	✓	✓	✓					✓	

Table 486: Mapping between COs of BBA-104 and (POs& PSOs)

BBA-104:Fundamentals of Psychology & Sociology											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To help students to acquire an appreciation for psychological concepts in general.	✓		✓		✓	✓				✓	✓
CO2:To acquire the cognitive skill in problem solving								✓			

Table 487: Mapping between COs of BBA-105 and (POs& PSOs)

BBA-105:Computers for Management											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:The objective of this course is to give an introduction to modern computer systems		✓	✓	✓	✓					✓	
CO2:To highlight the role played by it in managing today's business.											

Table 488: Mapping between COs of BBA-106 and (POs& PSOs)

BBA-106:Communication Skills											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:The objectives are to prepare the students to become aware of their communication potential and sensitive to the challenges that the industry poses	✓		✓		✓	✓			✓		✓
CO2:Tp develop the skills of effective communication.							✓				

Table 489: Mapping between COs of BBA-106L and (POs& PSOs)

BBA-106L:Communication Skills Lab											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:The objectives are to prepare the students to become aware of their communication potential and sensitive to the challenges that the industry poses		✓		✓		✓			✓		
CO2:T0 develop the skills of effective communication.				✓			✓			✓	

Table 490: Mapping between COs of BBA-201 and (POs& PSOs)

BBA-201:Organizational Behavior											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:The course aims to provide an understanding of basic concepts, theories and techniques in the field of human behaviour	✓		✓						✓		✓
CO2:To analyse at the individual, group and organizational levels in the changing global scenario.								✓			

Table 491: Mapping between COs of BBA-202 and (POs& PSOs)

BBA-202:Statistics for Management											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:The objective of this paper is to develop student's familiarity with the basic concept and tools in statistics.		✓		✓							
CO2:To understand techniques in assist specially in resolving complex problems which serve as a valuable guide to the decision makers.	✓		✓			✓				✓	✓

Table 492: Mapping between COs of BBA-203 and (POs& PSOs)

BBA-203:Macro Economics											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:The objective of this paper is to develop the concepts on Macroeconomic variables, working of an economy						✓					
CO2:To Understand how business decisions are affected with the influence of macro variables in business.	✓		✓		✓	✓				✓	✓

Table 493: Mapping between COs of BBA-204 and (POs& PSOs)

BBA-204:Financial Accounting												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
CO1:The primary objective of the course is to familiarize the students with the basic accounting principles and techniques of preparing and presenting the accounts for user of accounting information.								✓				
CO2:Student will able to implement accounting procedures, principals, and concepts in preparing final accounts.		✓		✓								

Table 494: Mapping between COs of BBA-205 and (POs& PSOs)

BBA-205:Basics of Financial Management												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
CO1:To acquaint the students with the concept of finance along with the sources and utilization of funds.	✓		✓			✓				✓	✓	
CO2:To impart knowledge on the capital structure, cost of capital and of the firm.						✓					✓	

Table 495: Mapping between COs of BBA-206 and (POs& PSOs)

BBA-206:Business Communication												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
CO1:The objectives are to prepare the students to acquire some of the skills needed in handling day to day managerial situation such as writing letters, paragraphs, reports, organize meetings, prepare agenda, draft resolution and minutes.		✓			✓					✓		
CO2:To enhance business communication and effective strategy	✓		✓				✓	✓			✓	

Table 496: Mapping between COs of BBA-301 and (POs& PSOs)

BBA-301 :Cost Accounting											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To familiarize students with basic knowledge of Cost Accounting.	✓		✓			✓				✓	✓
CO2:To provide basic knowledge on important Methods and Techniques of costing.						✓					

Table 497: Mapping between COs of BBA-302 and (POs& PSOs)

BBA-302 :Human Resource Management											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To acquaint the students with the Human Resource Management its different functions in an organizational context	✓		✓		✓	✓				✓	✓
CO2:To develop the students with human approach with a strong theoretical background that will be suitable for employees and benefit the organization								✓			

Table 498: Mapping between COs of BBA-303 and (POs& PSOs)

BBA-303 :Business Law											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To offer students a firsthand exposure to the legal aspects of business, so as to enable them to face the real-life world with a positive mind-set.		✓		✓							
CO2:This will also educate and familiarize students with actual legal situations regarding the following subjects listed below.	✓		✓			✓				✓	✓



Table 499: Mapping between COs of BBA-304 and (POs& PSOs)

BBA-304 :Principles of Marketing											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To identify the foundation terms and concepts those are commonly used in marketing.						✓					✓
CO2:To identify the essential elements for effective marketing practice.		✓			✓					✓	

Table 500: Mapping between COs of BBA-305 and (POs& PSOs)

BBA-305 :Business Environment											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:The basic objective of this course is to familiarize the students with the nature and dimensions of evolving business environment in India to influence managerial decisions.											
CO2:To enhance business environment knowledge	✓		✓				✓				✓

Table 501: Mapping between COs of BBA-306 and (POs& PSOs)

BBA-306 :Management Information System											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To enable the students to trace the growing importance of information system, vital role in decision making, role of computers in this task and it emphasis on the system, development process and approaches	✓		✓		✓						✓
CO2:To expose students on the recent development in MIS Systems and to focus on best practices, tools and models to implement an effective IS management system		✓		✓		✓			✓		

Table 502: Mapping between COs of BBA-401 and (POs& PSOs)

BBA-401 :Introduction to Financial Markets											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To introduce the economy and the financial system and provide the students various concepts of financial markets, specifically stock market operations and the derivatives market.											
CO2:Students will be able to understand various factors of Micro and Macro business environment						✓					

Table 503: Mapping between COs of BBA-402 and (POs& PSOs)

BBA-402 :Production and Operation Management											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To familiarize the students with the concepts, tools and practices of POM	✓		✓		✓	✓				✓	✓
CO2:To learn about the decisions and processes of operations management in a Manufacturing industry.								✓			

Table 504: Mapping between COs of BBA-403 and (POs& PSOs)

BBA-403 :Disaster Management											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To provide an insight to various disaster both natural and man-made and to find the reasons and remedies.		✓		✓							
CO2:To find ways to coordination and employ an integrated all-hazards risk based approach for mitigation, response, continuity of operations, recovery, and preparedness planning.	✓		✓			✓				✓	✓

Table 505: Mapping between COs of BBA-404 and (POs& PSOs)

BBA-404 :Indian Ethos and Values												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
CO1:To acquaint the students with the subject along with its relevance to managerial decision making.						✓					✓	
CO2:To improve the ability of students to understand and apply the essence of Indian ethos and values in today's business scenario.		✓			✓					✓		

Table 506: Mapping between COs of BBA-405 and (POs& PSOs)

BBA-405 :Marketing Management												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
CO1:To give complete idea about the relationship between marketing and other management functions.												
CO2:To acquaint the students about the concept of marketing skill through internet.	✓		✓				✓				✓	

Table 507: Mapping between COs of BBA-406 and (POs& PSOs)

BBA-406 :Fundamentals of Business Research Methods												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
CO1:The course aims at equipping students with an understanding of research process, tools and techniques in order to obtain the findings of the study.	✓		✓		✓						✓	
CO2:To familiarise the students with data preparation and analysis through Excel and Report Writing.		✓		✓		✓			✓			

Table 508: Mapping between COs of BBA-501 and (POs& PSOs)

BBA-501 :Strategic Management											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:This course aims to expose students to various perspectives and concepts in the field of Strategic Management, covering all the functional areas of business decision.											
CO2:To help students in strategy formulation and planning		✓		✓				✓			

Table 509: Mapping between COs of BBA-502 and (POs& PSOs)

BBA-502 :Operation Research											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:The objective of this paper is to develop student's familiarity with the basic concept and tool of Operations Research in solving real problems in industry and to help in decision support system.	✓		✓			✓				✓	✓
CO2:Discuss Operation research techniques phases and applications for any organization						✓					

Table 510: Mapping between COs of BBA-503 and (POs& PSOs)

BBA-503 :Banking Practice and Management											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To analyze the banking system prevailing and its role in the Economic Development in our country.	✓		✓		✓	✓				✓	✓
CO2:To examine the recent changes made in the Banking services to satisfy the customers at large.								✓			

Table 511: Mapping between COs of BBM-504 and (POs& PSOs)

BBM-504 :Consumer Behavior												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
CO1:This paper aims to achieve proficient knowledge about the various disciplines of contribution in understanding buyer behavior in a wholistic manner		✓				✓		✓				
CO2:Explain models of consumer behavior and individual buying									✓			

Table 512: Mapping between COs of BBM-505 and (POs& PSOs)

BBM-505 :Service Marketing												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
CO1:This course aims to learn strategic and multi-disciplinary approach to the management of service businesses in marketers' point of view.	✓		✓		✓							
CO2:Understanding the importance of service	✓		✓				✓					

Table 513: Mapping between COs of BBM-506 and (POs& PSOs)

BBM-506 :Advertising and Sales Promotion												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
CO1:This course aims to provide an understanding of the basic principles of planning and execution in Marketing Communications										✓		
CO2:Understanding the role of advertising in business context.		✓		✓								

Table 514: Mapping between COs of BBF-504 and (POs& PSOs)

BBF-504 :Management Accounting											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To aware the students about the usefulness of Management Accounting in the decision making process.	✓		✓		✓	✓			✓		✓
CO2:To analyze how effective control mechanisms can be established through the use of Budgets.	✓		✓	✓		✓	✓	✓			

Table 515: Mapping between COs of BBF-505 and (POs& PSOs)

BBF-505 :Financial Statement Analysis											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To acquaint the students with procedure of analysis and interpret the financial data.		✓			✓				✓		
CO2:To firmilarise the students with various types of financial analysis								✓			

Table 516: Mapping between COs of BBF-506 and (POs& PSOs)

BBF-506 :Auditing											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To acquaint the students with the basics of audit of books of account	✓		✓				✓		✓		
CO2:To familiarise the student, with the principles and practice of auditing				✓				✓	✓		

Table 517: Mapping between COs of BBH-504 and (POs& PSOs)

BBH-504 :Manpower Planning											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:The objectives of this paper is to develop the analytical abilities for understanding the implications of changes in the man power situation of a company and the availability of HR within the organization and outside		✓		✓		✓					
CO2:To advise and assist the authorities concerned in their manpower planning and development activities.		✓		✓	✓		✓	✓		✓	✓

Table 518: Mapping between COs of BBH-505 and (POs& PSOs)

BBH-505 :Employee Welfare & Social Securities											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:The course aims at providing basic knowledge of the concepts and application of employee welfare and social securities.	✓		✓					✓			
CO2:To analyses the traditional concepts of labour welfare, its policies and conditions of employee social security needs in the country.								✓		✓	

Table 519: Mapping between COs of BBH-506 and (POs& PSOs)

BBH-506 :Industrial Relations											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To acquaint students with basic understanding of industrial relations.		✓		✓							
CO2:To have an in-depth understanding of relations in industry.	✓		✓			✓	✓		✓		✓

Table 520: Mapping between COs of BBC-504 and (POs& PSOs)

BBC-504 :Computer Networks											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:The students will be exposed different types of media, multiplexing, switched networks, the Internet, TCP/IP suite, fibre-optic communications and the state-of-art networking applications.	✓		✓	✓		✓	✓		✓		
CO2:to have a practical exposure to networking environment		✓			✓				✓		

Table 521: Mapping between COs of BBC-505 and (POs& PSOs)

BBC-505 :E-Commerce											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:The objectives of the course are to introduce the concept of electronic commerce,	✓		✓					✓			
CO2:To understand how electronic commerce is affecting business enterprises, governments, consumers and people in general.	✓		✓				✓				

Table 522: Mapping between COs of BBC-506 and (POs& PSOs)

BBC-506 :Artificial Intelligence and Expert System											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To understand the importance of AI in business										✓	
CO2:To apply the concept of AI in Businesses		✓		✓							

Table 523: Mapping between COs of BBA-601 and (POs& PSOs)

BBA-601 :Entrepreneurship and Small Business											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To offer students a firsthand exposure to the entrepreneurial field to improve creativity	✓		✓		✓	✓			✓		✓
CO2:To develop the students entrepreneurial ability	✓		✓	✓		✓	✓	✓			



Table 524: Mapping between COs of BBA-602 and (POs& PSOs)

BBA-602 :Enterprise Resource Planning											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:Make a process model and apply it in the re-design of a process and understand the important role it plays in the development of a ERP project		✓			✓				✓		
CO2:Determine an understanding of some approaches and techniques of ERP and be able to apply them to ERP implementation								✓			

Table 525: Mapping between COs of BBA-603 and (POs& PSOs)

BBA-603 :Supply Chain Management											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:This course aims to incorporate and learn the critical elements of Logistics and Supply Chain Management processes	✓		✓				✓		✓		

Table 526: Mapping between COs of BBM-604 and (POs& PSOs)

BBM-604 :Selling & Sales Management											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:This course aims to develop skills critical for generating, evaluating and selecting sales and selling strategies	✓		✓					✓			

Table 527: Mapping between COs of BBM-605 and (POs& PSOs)

BBM-605 :Rural Marketing											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:This course aims to utilize the understanding on peculiarities of rural markets, channels and competition in marketing decision making.		✓		✓							
CO2:This course aims to provide a strategic perspective of the retailing industry with respect to latest developments in retailing in the Indian context	✓		✓	✓		✓	✓		✓		

Table 528: Mapping between COs of BBF-604 and (POs& PSOs)

BBF-604 :Risk Management & Insurance												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
CO1:To acquaint the students with the basic fundamentals of Risk Management	✓		✓					✓				
CO2:To familiarise the students with the practical aspects of life insurance and non-life insurance	✓		✓				✓					

Table 529: Mapping between COs of BBF-605 and (POs& PSOs)

BBF-605 :Investment Fundamentals												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
CO1:To develop the understanding of the investment fundamentals and build second knowledge in the investment process										✓		
CO2:To finalise the students with various methods of analyzing the basic characteristics of securities before investment		✓		✓								

Table 530: Mapping between COs of BBF-606 and (POs& PSOs)

BBF-606 :Introduction to Corporate Restructuring												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
CO1:Student will able to compare two companies financial data by arranging data in such a way that it will helpful to diagnose the financial performance of the company	✓		✓		✓	✓			✓		✓	
CO2:Students will have a practical exposure to do the financial statement analysis	✓		✓	✓		✓	✓	✓				

Table 531: Mapping between COs of BBH-604 and (POs& PSOs)

BBH-604 :Labour Legislation											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:The course is designed to impart knowledge of the contents of the labour laws, to expose the students to the interpretations		✓			✓				✓		
CO2:To stimulate thinking on rationale behind the laws and their enforcement problems.								✓			

Table 532: Mapping between COs of BBH-605 and (POs& PSOs)

BBH-605 :Compensation Management											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To understand the basics and fundamentals of compensation, rewards and the emerging trends.	✓		✓				✓		✓		
CO2:To understand the type of compensation				✓				✓	✓		

Table 533: Mapping between COs of BBH-606 and (POs& PSOs)

BBH-606 :Learning and Development											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To prepare students better understand the importance of training and development in recent years because of their contributions to the achievement of organizational objectives.		✓		✓		✓					
CO2:To develop a skill in learning		✓		✓	✓		✓	✓		✓	✓

Table 534: Mapping between COs of BBC-604 and (POs& PSOs)

BBC-604 :Internet and Web Page Design											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3
CO1:To develop a web page	✓		✓					✓			
CO2:To apply the concept in developing a website and exposure to internet environment								✓		✓	

Table 535: Mapping between COs of BBC-605 and (POs& PSOs)

BBC-605 :Data Base Management System												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
CO1:The student should develop skills and understanding in the design methodology for databases, verifying their structural correctness, implementing databases and applications software primarily in the relational model		✓	✓	✓	✓			✓			✓	
CO2:To design database for software	✓		✓		✓						✓	

Table 536: Mapping between COs of BBC-606 and (POs& PSOs)

BBC-606 :Introduction to 'C' Programming												
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	
CO1:To understand the concept of programming	✓			✓				✓	✓	✓	✓	
CO2:to acquire skill in developing software		✓			✓		✓					

### 5.4.3 MHA

Table 537: Mapping between COs of MHA-101 and (POs& PSOs)

MHA-101:Basic Concept of Health														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To make students familiar with human body its functions,health,disease and all level of prevention provided through hospital.	✓		✓		✓	✓							✓	✓
CO2:To enrich knowledge about health and role of hospital to maintain it.								✓		✓				

Table 538: Mapping between COs of MHA-102 and (POs& PSOs)

MHA-102:General Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:The objective of this paper is to make students familiar with general management concept.		✓	✓	✓	✓						✓		✓	
CO2:To explain principles and function of management.Planning and decision making to understand the importance of planning in management and to explain the mechanics of planning and decision making.									✓					

Table 539: Mapping between COs of MHA-103 and (POs& PSOs)

MHA-103:Organizational Behavior														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To understand the behavior of people at work environment and its relation in team building for achieving organizational goals through motivation, leadership and effective communication.	✓		✓		✓	✓					✓	✓		✓
CO2:To familiarize students with basic concepts of behavioural process in managing work force to bring organizational effectiveness.							✓							

Table 540: Mapping between COs of MHA-104 and (POs& PSOs)

MHA-104:Operation Research related to Hospital														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:The objective of this paper is to make the students familiar with the statistical and mathematical techniques and their applications in managing a hospital for the purpose of business decision making.		✓		✓		✓			✓			✓		
CO2:To familiarize the students with hospital operational activities like process of purchase and inventory management in a health care establishment.Theoretical/ Mathematical derivations are not included. Emphasis is to be given only on basic concepts and their simple applications (case studies) in hospital management areas.	✓		✓		✓	✓							✓	✓

Table 541: Mapping between COs of MHA-105 and (POs& PSOs)

MHA-105:Health care Services														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To provide the student and health care professional with a valuable set of data and insights into the major features and Indian health care system & how it compares with the other systems of the world.								✓		✓				
CO2:To make aware of students about evolution and development of health care system in the society as a whole.		✓	✓	✓	✓						✓		✓	

Table 542: Mapping between COs of MHA-106 and (POs& PSOs)

MHA-106:Planning & Designing Clinical Services Part- I														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To consider various planning & operational aspects of importance, function, location, area and space, organization, staffing pattern, utilization, and work.									✓					
CO2:Records, equipment & supplies requirement and standards and evaluation of each services.	✓		✓		✓	✓					✓	✓		✓

Table 543: Mapping between COs of MHA-201 and (POs& PSOs)

MHA-201:Basic Epidemiology														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To study the distribution of diseases in the community and the role of health administrators in its prevention.							✓							
CO2:To gain a knowledge of community spread diseases.		✓	✓	✓	✓						✓		✓	

Table 544: Mapping between COs of MHA-202 and (POs& PSOs)

MHA-202:Planning & Designing Clinical Services Part-II														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To consider various planning and operational aspects of importance, function and other factors of each clinical services.									✓					
CO2:To incorporate the design of Clinical services.	✓		✓		✓	✓								✓

Table 545: Mapping between COs of MHA-203 and (POs& PSOs)

MHA-203:Bio-statistics Related to Health & Hospital														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To make the student to understand the concepts in biostatistics and to apply the techniques in decision making. Also, to understand the role of statistics in estimation of burden of diseases, methods applicable to health.								✓		✓				
CO2:Mathematical derivations are not required. Emphasis is to be given on concepts and applications only.		✓	✓	✓	✓						✓			

Table 546: Mapping between COs of MHA-204 and (POs& PSOs)

MHA-204:Marketing Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To make aware of the concepts of marketing and developing analytical skills for problem solving in hospital scenario.									✓				✓	
CO2:To understand the marketing policy and planning in corporate hospitals.	✓		✓		✓	✓					✓	✓		

Table 547: Mapping between COs of MHA-301 and (POs& PSOs)

MHA-301:National Health Programme														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To create awareness about Indian health policy, planning and management and role of hospital in supportive and referral services in national goal.							✓							
CO2:To understand different policy and planning of health programme		✓		✓		✓			✓			✓		



Table 548: Mapping between COs of MHA-303 and (POs& PSOs)

MHA-303:Overview of Hospital System														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To give an idea about hospital and its role in health care delivery system. To review the history of hospitals, role of political and economic actions in growth of hospitals & classification of hospitals.				✓			✓			✓			✓	✓
CO2:Toonline the peculiarities of health care institutions, factors influencing hospital care and role of hospital management in provisioning of good patient care. Management of a teaching hospital, district hospital, PHC, nursing homes etc.	✓		✓		✓	✓								✓

Table 549: Mapping between COs of MHA-304 and (POs& PSOs)

MHA-304:Hospital Information System														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:Students to learn various hospital information required in the hospital for smooth functioning , patient care, legal and research purposes.								✓		✓			✓	
CO2:To know the information flow in hospitals	✓		✓				✓	✓						✓

Table 550: Mapping between COs of MHA-305 and (POs& PSOs)

MHA-305:Planning & Designing of Supportive Services														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To make aware of students about detailed supportive services provided in the hospital which is part of whole patient care	✓		✓		✓	✓							✓	✓
CO2:To understand the design and service in hospital								✓		✓				

Table 551: Mapping between COs of MHA-306 and (POs& PSOs)

MHA-306:Research methodology														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:A hospital administrator has to take various strategic decisions, which should be very effective as well as efficient. To achieve this , a sound basis is needed. The Research Methodology provides such a basis as it provides a scope to get insight into the problem and relates customers, customers and the Management.		✓	✓	✓	✓						✓		✓	
CO2:The fundamental objective of this course is to familiarize the students into different areas of Hospital research and various techniques involved in it.									✓					

Table 552: Mapping between COs of MHA-401 and (POs& PSOs)

MHA-401:Health Economics														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To describe basic concepts of health economics and its application in health sector.	✓		✓		✓	✓					✓	✓		✓
CO2:To familiarize with concepts of health insurance, its scope and applicability in our country.					✓		✓	✓						

Table 553: Mapping between COs of MHA-402 and (POs& PSOs)

MHA-402:Planning & Designing of Utility Services														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To teach the students various utility services in the hospital which are important facets of better patient care.		✓			✓								✓	
CO2:To teach the students various utility services in the hospital which are important facets of better patient care.	✓		✓				✓		✓	✓				✓

Table 554: Mapping between COs of MHA-403 and (POs& PSOs)

MHA-403:Planning & Designing Hospital														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To create awareness about the changing requirements of health services and hospital design, which should necessarily follow the functional needs.	✓		✓		✓						✓			✓
CO2:To outline general considerations in planning & designing of hospitals: what, where & how to build		✓		✓		✓						✓		

Table 555: Mapping between COs of MHA-404 and (POs& PSOs)

MHA-404:Material Management														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To prepare the students to know various materials required in the hospital											✓			
CO2:To know how to plan to procure, maintain for the smooth functioning of the hospital with minimum expenditure.	✓		✓			✓				✓		✓		

Table 556: Mapping between COs of MHA-405 and (POs& PSOs)

MHA-405:Hospital Administration														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To give an idea about hospital and its role, peculiarities & factors influencing hospital care and role of hospital administrator to solve them.														
CO2:To understand the administration process in hospital		✓		✓				✓	✓	✓	✓			

Table 557: Mapping between COs of MHA-406 and (POs& PSOs)

MHA-406:Pharmacy Services														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To make aware of the students how to manage medical store and pharmacy in a hospital.	✓		✓				✓		✓	✓				✓
CO2:To understand the smooth flow of drugs and allied requirements in patient care with minimum cost	✓		✓		✓						✓			✓

Table 558: Mapping between COs of MHA-501 and (POs& PSOs)

MHA-501:Safety & Risk Management in Hospitals														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To make aware the various aspects of administration concerned to safety and risk management in the hospital	✓		✓			✓				✓		✓		
CO2:The analyze the risk in hospital management.		✓				✓		✓	✓					

Table 559: Mapping between COs of MHA-502 and (POs& PSOs)

MHA-502:Nursing Administration														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To educate students about complete nursing administration which is part of the total patient care delivery system in the hospital.		✓		✓		✓						✓		
CO2:To know the practices in nursing scenario.											✓			

Table 560: Mapping between COs of MHA-503 and (POs& PSOs)

MHA-503:Planning & Designing Specific Hospital & Superspeciality Centre														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To educate specific specialized area of the hospital and different types of hospitals which need special attention for designing and planning of the hospital.		✓		✓		✓						✓		
CO2:To understand the planning and design of hospitals											✓			

Table 561: Mapping between COs of MHA-504 and (POs& PSOs)

MHA-504: Medical Audit & Health Insurance														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To make aware of students how to audit the hospital services proved to assess the performance and improve further.	✓		✓		✓						✓			✓
CO2:To know the policy and insurance related to patients		✓			✓				✓		✓		✓	✓

Table 562: Mapping between COs of MHA-505 and (POs& PSOs)

MHA-505: Legal issues related to Hospital														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To explain the laws and regulations applicable to hospital and hospital employee while providing patient care.	✓		✓		✓						✓			✓
CO2:To know the legal issues in patient care	✓		✓				✓	✓	✓				✓	

Table 563: Mapping between COs of MHA-506 and (POs& PSOs)

MHA-506:Quality Management in Hospital & Health Care														
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
CO1:To understand the concept of quality and its relation to health care scenario.	✓		✓			✓			✓		✓			✓
CO2:Its importance as regards patient satisfaction & marketing of services provided.				✓		✓	✓		✓	✓		✓	✓	

## 6 Agricultural Program (4<sup>th</sup> Dean's Committee)

In order to make higher agricultural education relevant to present day needs, produce graduates with entrepreneurial skills for self-employment and contributors of rural livelihood and food security need is felt for reorienting agricultural education. In view of globalization and development of new technologies, it is essential that the students meet international quality standards. One of the pillars for quality assurance in agricultural education is the curriculum, which takes care of contemporary needs, provides for analytical skill, entrepreneurship and experiential learning for having confidence to do profitable farming and contributors of sustainability of agriculture.

## **6.1 Mission of Agricultural Program**

Develop skilled human resource for developing sustainable agriculture farming system leading to technological and economic empowerment of practitioner of agriculture.

## **6.2 Objectives of Agricultural Program**

- To train manpower with more practical orientation to cater to the needs of public, private and corporate sectors in Agriculture.
- To impart knowledge and training in interdisciplinary production oriented courses in Agriculture.
- To provide experiential learning and hands - on training for developing entrepreneurial skill for being job provider rather than jobseekers.

## **6.3 Program Outcomes**

The following POs are defined for the Agricultural Program (4<sup>th</sup> Dean's Committee).

- PO1: The agricultural graduates will be able to guide the farmers on selection of crops/ variety and provide production technologies based on agro-ecological situations and farmers resources.
- PO2: They develop the knowledge in providing solution to raising crops with respect to management of nutrients, water and disease and pests both in agronomical and horticultural crops.
- PO3: They acquire the skill to translate the crop- based scientific recommendation in farmers language and transmit them to the farming community for adoption.
- PO4: They develop basic knowledge on different courses related to different disciplines of agricultural sciences to pursue higher education in respective discipline of their interest and employment in different govt. and non-govt. sectors and also to take up agri-based entrepreneurship.

## 6.4 Mapping of CO Vs POs

### 6.4.1 B.Sc. Agriculture

Table 564: Mapping between COs of AG 111 and POs

AG 111: Introductory Agriculture (Ancient, Heritage, Agriculture, Scenario and gender equity in Agriculture)				
Course Outcome	PO1	PO2	PO3	PO4
CO1:At the end of session, students will understand the applicability of old and sustainable agril. practices in present day agricultural practices.	✓	✓		
CO2:Self employment capability through agro-entrepreneurship development				✓
CO3:Students can enhance their knowledge as well as develop eco-friendly farming system models	✓			

Table 565: Mapping between COs of AG 112 and POs

AG 112: Principles of Agronomy and Agricultural Meteorology				
Course Outcome	PO1	PO2	PO3	PO4
CO1:Students are aware to understand the occurrence of different weather parameters, recording of data of weather elements and their interpretation in crop growth and production.	✓	✓		
CO2:Students will be acquainted with the weather forecast system, and can help the farmers in adopting necessary measures suggested through agro advisory service.	✓		✓	
CO3:Develops knowledge to Identify fertilizers, can advise farmers the crop based dose and commercial requirement and suitable farm implements for crops under different land types	✓			



Table 566: Mapping between COs of PB 111 and POs

PB 111: Principles of Genetics				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Knowledge on the basic principles of heredity and variation	✓			
CO2: Understanding on cytogenetics, polyploidy, mutation and gene expression	✓			
CO3: Development of analytical, quantitative and problem solving skills from classical to molecular genetics	✓			✓
CO4: Help the students in understanding the upcoming courses related to plant breeding and genetics	✓			✓

Table 567: Mapping between COs of SC 111 and POs

SC 111: Introduction to Soil Science				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students will gain knowledge regarding soil physical properties and processes in relation to plant growth.	✓			
CO2: They will get a brief overview on origin of the earth, rocks and minerals, weathering and soil formation	✓			
CO3: Practical excellence in soil sampling and qualitative analysis of some important soil parameters	✓			✓

Table 568: Mapping between COs of AT 111 and POs

AT 111: Fundamentals of soil and water conservation engineering				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Proper management of land and water will help to maintain the soil fertility by reducing the erosion and increasing moisture content	✓	✓		
CO2: Enhancement of economic benefit of the farmers of the area	✓		✓	
CO3: Surveying and levelling will help in demarcation of land area	✓			✓

Table 569: Mapping between COs of PP 111 and POs

PP 111: Agricultural Microbiology				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Acquired knowledge about different microbes		✓		
CO2: Knowledge on different beneficial microorganisms involve in production of bio gas, bio-fertilizer, microbial pesticide and bio degradation		✓	✓	
CO3: Familiarization of the students with basic knowledge of handling laboratory equipment, techniques and methods required in conducting experiments				✓

Table 570: Mapping between COs of CP 111 and POs

CP 111: Crop Physiology				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Details knowledge about the physiology of seed development, maturation and changes during seed development and physiological and biochemical changes during a seed life to a mature and during post-harvest changes	✓			
CO2: Physiology of crops is the fundamental importance as it provides basic knowledge of plant internal functions and various life processes along with different growth parameters and mineral nutrition of plants role in crop growth	✓	✓		
CO3: Then one can better understand on physiological performances of crops in the field under agro climatic situations to predict yield and productivity	✓	✓		

Table 571: Mapping between COs of HT 111 and POs

HT 111: Crop Physiology				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Basic concepts of production technology along with different variety and its rootstock of tropical, sub-tropical and minor fruit crops	✓		✓	
CO2: Different commercial propagation method with canopy management on fruit crops	✓		✓	✓
CO3: Different Intercultural operation which was suitable for fruit crops	✓		✓	

Table 572: Mapping between COs of AS 121 and POs

AS 121: Agricultural Statistics				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Brain exercise with basic statistical tools will develop the student's skill				✓
CO2: Practical presentation of data in graphical way				✓

Table 573: Mapping between COs of AS 122 and POs

AS 122: Introduction to computer and application				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Establishment of consultancy farm				✓
CO2: Helping farmers in smart way			✓	✓

Table 574: Mapping between COs of AG 121 and POs

AG 121: Water management including micro irrigation				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Know and understand the water management in field crops with some water saving technologies and increase water use efficiency without hampering to the yield	✓	✓		
CO2: Students can recommend scientific based irrigation scheduling in crops and cropping systems keeping in view the water resource available with the farmers and adopting integrated water resource management approach both on station and on farm situations		✓	✓	
CO3: Students will be acquainted with managing irrigation water in different crops for higher irrigation and field efficiency	✓	✓		

Table 575: Mapping between COs of CP 121 and POs

CP 121: Principles of Seed Technology				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Details knowledge about the growth, development and production strategy of different quality seeds	✓	✓		
CO2: Different Technology used for processing of the seed and long term storage methods for better seed quality			✓	✓
CO3: Forecasting of demand of quality seed and market linkage for better availability of seed to the farmer			✓	

Table 576: Mapping between COs of AE 121 and POs

AE 121: Principles of Agril. Economics)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students will learn the basic economic terminology related to major branches				✓
CO2: Knowledge about basic working of the Indian economy at micro and macro level				✓
CO3: Learn to apply these economic concepts in agricultural sector			✓	✓

Table 577: Mapping between COs of EE 121 and POs

EE 121: Dimensions of Agril. Extension)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Analyze the concepts, objectives and principles of extension education & agricultural extension			✓	
CO2: Acquaint with different development programmes			✓	
CO3: Analyze the present extension system implemented in the country and the ongoing developmental programmes			✓	✓
CO4: Acquaint with the present extension approaches			✓	✓

Table 578: Mapping between COs of PP 121 and POs

PP 121: Plant Pathogens and Principles of Plant Pathology)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Learned about plant pathogens and their identification in laboratory		✓		
CO2: Development of knowledge in plant disease forecasting		✓	✓	✓
CO3: Knowledge on different methods of disease management which will be helpful for formulating disease management strategy		✓	✓	
CO4: Preparation of various fungicides				✓

Table 579: Mapping between COs of SC 121 and POs

SC 121: Soil Chemistry, Soil Fertility and Nutrient Management)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: This course will provide various theoretical informations about soil chemistry , soil fertility and nutrient management, essential elements, nutrient transport, nutrient availability		✓		
CO2: They can evaluate soil fertility by using suitable methods		✓		
CO3: Analysis and recommendation some of the essential nutrients in soil		✓	✓	

Table 580: Mapping between COs of AG 211 and POs

AG 211: Field Crops-I (kharif)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students will develop knowledge of raising different field crops specific to kharif	✓	✓		
CO2: Application skills in raising and managing kharif crops scientifically	✓	✓	✓	
CO3: Scope for agro-entrepreneurship				✓

Table 581: Mapping between COs of PB 211 and POs

PB 211: Principles of Plant Breeding)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students will develop knowledge of raising different field crops specific to kharif	✓			
CO2: Application skills in raising and managing kharif crops scientifically	✓			
CO3: Scope for agro-entrepreneurship	✓		✓	✓

Table 582: Mapping between COs of EN 211 and POs

EN 211: Insect Morphology and Systematics)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Knowledge on basic morphology and anatomy of an insect		✓		
CO2: Expertization on collection, preservation of insects and its body parts and dissection techniques of insect body parts		✓		✓
CO3: Basic ideas on classification of insects up to order level		✓		

Table 583: Mapping between COs of AE 211 and POs

AE 211: Agricultural Finance and Co-operation)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students will learn skills on financial economics tools used in agricultural finance			✓	✓
CO2: Gain knowledge about working of the financial sector of India				✓
CO3: Able to analyse and apply the financial management tools in agriculture sector			✓	

Table 584: Mapping between COs of AT 211 and POs

AT 211: Farm power and machinery)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Practical oriented skills to use various farm machineries and equipments in field				✓
CO2: Knowledge on various sources of power utilized at farm				✓
CO3: Knowledge of equipments utilized for land development works	✓			✓
CO4: Practical oriented skills in operation and maintenance of farm power e.g.-tractor and power tiller				✓

Table 585: Mapping between COs of HT 211 and POs

HT 211: Production Technology of Vegetables & Flowers)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Outcome of this course is to get theoretical and practical knowledge on raising of different nursery in vegetables and flowers	✓			
CO2: Get idea about production technology, Intercultural operation its canopy management of different vegetables and flowers	✓			
CO3: Planning and layout of gardens and garden designs for public and private areas	✓			✓

Table 586: Mapping between COs of AH 211 and POs

AH 211 : Livestock Production and Management)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Outcome of this course is to get theoretical and practical knowledge on raising of different nursery in vegetables and flowers				✓
CO2: Get idea about production technology, Intercultural operation its canopy management of different vegetables and flowers				✓
CO3: Planning and layout of gardens and garden designs for public and private areas				✓

Table 587: Mapping between COs of PP 211 and POs

PP 211: Introductory Nematology)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Student acquire the basic knowledge on handling laboratory appliances and develop skill of collection of soil, extraction of nematodes and staining				✓
CO2: Adequate identification of the symptoms of diseases inflicted by nematodes and take appropriate steps towards developing management strategies		✓		
CO3: Students will know the damage potential and biology of nematode taxa that are parasitic to plants		✓		

Table 588: Mapping between COs of NC 211 and POs

NC 211: NSS/NCC/Physical Education*)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Student acquire the basic knowledge on handling laboratory appliances and develop skill of collection of soil, extraction of nematodes and staining				✓
CO2: Adequate identification of the symptoms of diseases inflicted by nematodes and take appropriate steps towards developing management strategies				✓
CO3: Students will know the damage potential and biology of nematode taxa that are parasitic to plants				✓

Table 589: Mapping between COs of AG 221 and POs

AG 221: Field Crops-II (Rabi))				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students will develop knowledge of raising different field crops specific to Rabi crops	✓	✓		
CO2: Application skills in raising and managing kharif crops scintifically	✓	✓	✓	
CO3: Scope for agro-entrepreneurship				✓

Table 590: Mapping between COs of EN 221 and POs

EN 221: Insect Ecology & Integrated pest management including beneficial insects)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Knowledge on basic concepts of ecology	✓			
CO2: Ideas on the basic tools, components of IPM which will create employability			✓	✓
CO3: Knowledge on sampling techniques for the estimation of insect population and damage; Pest surveillance				✓
CO4: Identification of earthworms in vermiculture– visit to vermiculture unit		✓		

Table 591: Mapping between COs of AE 221 and POs

AE 221: Agricultural marketing, Trade and Prices)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students will learn the use of price analysis tools for agricultural market prices			✓	
CO2: Knowledge about practical application of marketing and price analysis tools in policy making				✓
CO3: Develop an understanding on the working of markets from local to global level			✓	✓

Table 592: Mapping between COs of PP 221 and POs

PP 221: Diseases of Field Crops and their management)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Development of knowledge on diagnosing different diseases of field crops based on the symptoms expressed in the field		✓		✓
CO2: Acquire the skill of collection and preservation of diseased specimens		✓		
CO3: Development management strategies to tackle the diseases in field crops		✓		✓



Table 593: Mapping between COs of AT 221 and POs

AT 221: Protected cultivation & post harvest technology)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Design of Green house and their construction with different systems for hi-tech agriculture under controlled environment			✓	✓
CO2: Handling and safe storage of agricultural product			✓	✓
CO3: Practical skills on different post-harvest equipments			✓	✓

Table 594: Mapping between COs of HT 221 and POs

HT 221: Production technology of spices, Aromatics, Medicinal and Plantation crops)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: To developed an idea about identification, production technology and propagation of Spices, Aromatic, Medicinal and Plantation crops	✓			✓
CO2: Outcome of this course is to get knowledge on different processing method and distillation process of Spices, Aromatic, Medicinal and Plantation crops				✓
CO3: Practical knowledge on selection of mother palm, and seed nuts in coconut and oil palm	✓			✓

Table 595: Mapping between COs of PB 221 and POs

PB 221: Breeding of Field / Horticultural crops)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Exposure to various conventional and modern plant breeding methods for the improvemet of important field/horticulture crops	✓			✓
CO2: Development of analytical, quantitative and problem solving skills related to plant breeding				✓
CO3: Visit to seed production plots, AICRP plots of different field crops and getting a practical knowledge on hybrid development	✓			✓

Table 596: Mapping between COs of NC 221 POs

NC 221: NSS/NCC/Physical Education*)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: The social leadership capability will be developed among the students				✓
CO2: Students will be aware about the social problems, stigmas and make the students capable to tackle them				✓
CO3: Students will be able to know various programmes related to society and their skills will be enhanced.				✓

Table 597: Mapping between COs of AG 311 and POs

AG 311: Farming Systems and Sustainable Agriculture)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students are acquainted with the concept of farming system and IFS modules for different category of farmers with varying resources to generate year round income	✓		✓	
CO2: Self employment capability through agro-entrepreneurship development by utilizing the by products from different enterprise				✓
CO3: Students can enhance their knowledge as well as develop eco-friendly farming system models in a sustainable manner through resource recycling	✓			

Table 598: Mapping between COs of AG 312 and POs

AG 312: Practical Crop Production-I (Kharif Crops)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students will gain the knowledge of selecting good quality seeds, manures, fertilizers, plant protection chemicals, farm machineries and irrigation management for different field crops in rainfed and irrigated farming	✓	✓		
CO2: Students will get the benefit of imparting training to the farmers and farm women in their practical life after entering to the service at the state government and central government			✓	✓
CO3: Students can recommend scientific based crop management practices for different crops under varying farming situations both for resource poor and resource rich farmers			✓	

Table 599: Mapping between COs of SC311 and POs

SC 311: Biochemistry)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students will gain a theoretical experience on the fundamental / elementary knowledge on structure and functions and metabolism of biomolecules		✓		
CO2: They will get a brief overview of the applications of biochemistry in different sectors				✓
CO3: Practical excellence in determining the important biomolecules through different analytical methods				✓

Table 600: Mapping between COs of EN 311 and POs

EN 311: Crop Pests and stored grain pests and their management)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Typical knowledge on identification of pests, their damage symptoms		✓		
CO2: Knowledge on the different tools and techniques of IPM to manage the pests in field condition as well as stored condition				✓

Table 601: Mapping between COs of EE 311 and POs

EE 311: Fundamentals of Rural Sociology and Educational Psychology)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Understand concept of rural sociology, its importance in agricultural extension, characteristics of Indian rural society				✓
CO2: Understand social groups, social stratification, culture, social values, social control and attitudes				✓
CO3: Understand concept of educational psychology, intelligence, personality, perceptions and motivation				✓
CO4: Assess personality types, leadership types and emotions of human beings				✓

Table 602: Mapping between COs of AE 311 and POs

AE 311: Fundamentals of Farm-Business Management (Including product development, Appraisal and Monitoring)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students will learn the management aspect of agricultural businesses				✓
CO2: Gain knowledge directly from business economics to evaluate projects and new ventures in agricultural sector				✓
CO3: Able to work on projects of agricultural business management				✓

Table 603: Mapping between COs of HT 311 and POs

HT 311: Post harvest management and value addition of fruits and vegetables)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: To get some idea about different post-harvest practices like sorting, grading and packaging			✓	✓
CO2: To get idea about different storage house and its method of storage in Fruits and Vegetables			✓	✓
CO3: Preparation of different value added product like jam, jelly, sauce, ketch up, chips, RTS, pickle etc			✓	✓

Table 604: Mapping between COs of PP 311 and POs

PP 311: Disease of Horticultural crops and their management)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Development of knowledge on diagnosing different diseases of horticultural crops based on the symptoms expressed in the field		✓		✓
CO2: Acquire the skill of collection and preservation of diseased specimens		✓		
CO3: Development management strategies to tackle the diseases in horticultural crops		✓		✓

Table 605: Mapping between COs of EE 312 and POs

EE 312: Extension Methodologies for Transfer of Agricultural Technology)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: To describe the meaning of communication, classify the methods and explain the meaning, objectives, procedures involved in carrying out various individual, group and mass contact methods				✓
CO2: To describe various factors influencing selection of extension methods				✓
CO3: Know about various information tools and sources like internet, cyber cafes, kiosks, video and tele conferencing including agri journalism				✓
CO4: Describe the importance of capacity building of extension personnel and farmers			✓	✓
CO5: Explain the meaning of training and discuss various types of training to farmers and enumerate the objectives of Farmer's training centres, mandates of KVK			✓	✓

Table 606: Mapping between COs of NC 311 and POs

NC 311: NSS/NCC/Physical Education*)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: The social leadership capability will be developed among the students				✓
CO2: Students will be aware about the social problems, stigmas and make the students capable to tackle them				✓
CO3: Students will be able to know various programmes related to society and their skills will be enhanced				✓

Table 607: Mapping between COs of AE 321 and POs

AE 321: Production Economics & Farm management)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students will have a detailed understanding about inputs and outputs in agriculture, agricultural and natural resource management		✓		
CO2: Knowledge about combination of inputs/outputs in production process, how can they be adjusted for optimized resource use and better profits		✓	✓	
CO3: Able to understand and formulate farm plans through various farm management and optimization skills			✓	✓

Table 608: Mapping between COs of EE 321 and POs

EE 321: Entrepreneurship Development and Communication Skills)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: To discern distinct entrepreneurial traits				✓
CO2: To know the parameters to assess opportunities and constraints for new business ideas,				✓
CO3: They can know about decision making, managing the enterprise, motivation and entrepreneurship development				✓
CO4: Familiarize with govt. policies on small and medium enterprises, EXIM policies, capital system and its partnership different agro inputs industry, Indian agricultural processing and export industry			✓	✓
CO5: Develop skills in grammar, communication skills, writing skill, presentation skills, public speaking, group discussion, organizing seminars and conferences			✓	✓

Table 609: Mapping between COs of PB 321 and POs

PB 321: Principles of Plant Biotechnology)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Getting acquainted with various types micro-propagation methods and their application in crop improvement	✓			✓
CO2: Idea on recombinant DNA technology and various methods of gene transfer				✓
CO3: Exposure to the field of of transgenics and their application in crop improvement	✓			
CO4: Knowledge on various types of marker systems and their application in in crop improvement	✓			✓

Table 610: Mapping between COs of AG 321 and POs

AG 321: Practical Crop Production-II (Rabi Crops)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students will gain the knowledge of selecting good quality seeds, manures, fertilizers, plant protection chemicals, farm machineries and irrigation management for different field crops in rainfed and irrigated farming.	✓	✓		
CO2: Students will get the benefit of imparting training to the farmers and farm women in their practical life after entering to the service at the state government and central government			✓	✓
CO3: Students can recommend scientific based crop management practices for different crops under varying farming situations both for resource poor and resource rich farmers			✓	

Table 611: Mapping between COs of AG 322 and POs

AG 322: Weed management)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students are enriched with recent developments in herbicide , their selectivity and mode of action, resistance development etc.		✓		
CO2: Students will develop knowledge to select crop specific herbicides, their use, dose calculation and safe handling		✓	✓	
CO3: Students can know the critical crop weed competition period, possible phytotoxicity and residual effects of herbicides in different crops under different crop agro-ecological systems.		✓	✓	✓

Table 612: Mapping between COs of SC 321 and POs

SC 321: Environmental Science)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: This course will make the students aware of different environmental concerns like pollution, conservation, etc and will create a pro-environmental attitude.				✓
CO2: Learning about the ways to manage important and frequently occurring disasters of India				✓
CO3: Ability to conduct various qualitative and quantitative tests for waste samples collected from the locality				✓

Table 613: Mapping between COs of AT 321 and POs

AT 321: Renewable Energy)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Knowledge on Energy sources, biogas plants, Gasifiers, Briquettes				✓
CO2: A brief knowledge on Solar energy and its application				✓
CO3: Appreciate the need of Wind energy, its various components, classifications and applications				✓

Table 614: Mapping between COs of HT 321 and POs

HT 321: Urban Agriculture and Horticulture)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Outcome of this course is to get knowledge on growing of fruits, flowers and vegetables in pots and its maintenance.	✓			
CO2: Calculation of cost benefit ratio under different situation of city farming			✓	✓
CO3: Preparation of formulations of pesticides and its use in the management of pests and diseases of potted plants		✓		

Table 615: Mapping between COs of SS 321 and POs

SS 321: Comprehension and Communication Skills in English)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: To improve soft skills like communication skills, interpersonal skills, presentation skills etc.				✓
CO2: To learn the skills designed to help the candidates to express themselves better in academic and professional careers				✓
CO3: To be trained in professional writing with enriched vocabulary and expertise in conversation, interviews, presentations, group discussions etc				✓
CO4: Students will be able to prepare their curriculum vitae and job applications which will help them in building their professional career.				✓



Table 616: Mapping between COs of NC 322 and POs

NC 322: NSS/NCC/Physical Education*)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: The social leadership capability will be developed among the students				✓
CO2: Students will be aware about the social problems, stigmas and make the students capable to tackle them				✓
CO3: Students will be able to know various programmes related to society and their skills will be enhanced.				✓

Table 617: Mapping between COs of RAWE-411 and POs

RAWE-411: Rural Agricultural Work Experience)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Develop a team work and build competency in understanding real life situations				✓
CO2: Learn about management of different components				✓
CO3: Develop problem solving attitude, art of creative thinking, time management, art of listening, positive use of feedback, observation power, managing conflicts, working in local institutions, working with other organizations etc.			✓	✓

## 6.4.2 Crop Production

Table 618: Mapping between COs of CP-1 and POs

CP-1: Seed Production Technology)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Adequate practical knowledge on seed production of both OPVs and Hybrids.	✓			✓
CO2: Provide knowledge regarding seed quality control and seed quality enhancement techniques	✓			✓
CO3: Visit to different seed processing units and seed production plots will enable students to involve themselves in both public and private sector seed enterprises				✓

Table 619: Mapping between COs of CP-2 and POs

CP-2: Integrated Farming System)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students are acquainted with the concept of farming system and IFS modules for different category of farmers with varying resources to generate year round income	✓		✓	
CO2: Self employment capability through agro-entrepreneurship development by utilizing the by products from different enterprise				✓
CO3: Students can enhance their knowledge as well as develop eco-friendly farming system models in a sustainable manner through resource recycling	✓		✓	

Table 620: Mapping between COs of CP-3 and POs

CP-3: Water Management (Watershed Micro-irrigation Problematic Water))				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students will be acquainted with managing irrigation water in different crops for higher irrigation and field efficiency		✓		
CO2: Students will be able to recommend suitable water saving technologies and irrigation methods with an aim to produce more crop per drop.	✓	✓	✓	
CO3: Students can adopt scientific based irrigation scheduling in crops and cropping systems as part of their entrepreneurship with an approach on high-tech agriculture	✓	✓	✓	

Table 621: Mapping between COs of CP-4 and POs

CP-4: Soil Management (Conservation Problematic soil, Soil quality))				
Course Outcome	PO1	PO2	PO3	PO4
CO1: This course will impart knowledge about soil erosion, soil quality, problematic soils their extent, distribution and nature in India and management.	✓			
CO2: The students pursuing this course will be able to assess the problematic soils through qualitative and quantitative analysis of various soil parameters.	✓			✓
CO3: Assessment and various methods of management of the detected problematic soils	✓			

Table 622: Mapping between COs of ABM-6 and POs

ABM-6: Project formulation, Evaluation and Monitoring(Minor)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Learn about tools and techniques for preparing and evaluating agribusiness projects				✓
CO2: On other hand they can learn monitoring and evaluation as effective tools for enriching quality of interventions through their role in decision making and learning			✓	✓
CO3: They will also learn about various computer applications, IT and data base management techniques.				✓

### 6.4.3 Crop Protection

Table 623: Mapping between COs of CPT-1 and POs

CPT-1: IPM and management of post harvest insect and non-insect pests)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Development of skill to estimate ETL, EIL, GEP, and determination of population size as well as different sampling procedures.		✓		✓
CO2: Awareness about importance of post-harvest management of insect pests of different crops and familiarization with different storage structures.		✓	✓	✓
CO3: Profound knowledge on pest scouting in field condition which will be helpful in further future for the employment purpose.				✓

Table 624: Mapping between COs of CPT-2 and POs

CPT-2: IDM and Management of important Plant diseases)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Student will know about collection of disease samples and raising of pure culture of pathogen.				✓
CO2: Knowledge on application patterns of chemicals and equipment used for it.		✓		✓
CO3: Knowledge on management of Post-harvest disease of grains, vegetables and fruits.		✓		✓

Table 625: Mapping between COs of CPT-3 and POs

CPT-3: Mushroom Cultivation)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Basic knowledge on commercially grown mushroom		✓	✓	
CO2: Knowledge on Preparation of mother culture, spawn, substrate etc to develop entrepreneurship				✓
CO3: Knowledge on economics and constraints of mushroom cultivation.			✓	
CO4: Knowledge on preparation of a Business Model of mushroom enterprise				✓

Table 626: Mapping between COs of CPT-4 and POs

CPT-4: Bio-control agencies and bio-pesticide (mass multiplication and uses))				
Course Outcome	PO1	PO2	PO3	PO4
CO1: This course will provide the knowledge on importance, identification, extraction and mass production of different biocontrol agents.		✓		✓
CO2: Ideas of preparation of antimicrobial bio-pesticides and methods of testing bio-formulation under different field condition.		✓		✓
CO3: Knowledge on use of different plant products in pest control		✓		

#### 6.4.4 Post Harvest Technology and Value addition

Table 627: Mapping between COs of PHT-1 and POs

PHT-1: Post harvest Technology of Fruits and vegetables)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: To get some idea about different post harvest practices like sorting, grading and packaging				✓
CO2: Aim to get knowledge about different storage house and its methods for different fruits and vegetables.				✓
CO3: Preparation of different value added product like jam, jelly, sauce, ketch up, chips, RTS, pickle etc.			✓	✓

Table 628: Mapping between COs of PHT-2 and POs

PHT-2: Unit operation for quality value addition processing and development of new products)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Develops idea about different value added products related to fruits and vegetables.			✓	✓
CO2: Capability to meet food requirements of a growing population by eliminating losses , making more nutritive food items from raw commodities.				✓
CO3: Develop idea about maturity indices, methods of storage, packaging principles of preservation, canned products, bottling, freezing, dehydration and drying.			✓	✓

Table 629: Mapping between COs of PHT-3 and POs

PHT-3: Integrated storage management of fruits, flowers and vegetables)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: To get some idea about different post harvest practices like sorting, grading and packaging of fruits, flowers and vegetable			✓	✓
CO2: Aim to get knowledge about different storage house and its methods for different fruits, flowers and vegetables.			✓	
CO3: They learnt about pre and post harvest treatment for improvement of shelf life.		✓		

Table 630: Mapping between COs of PHT-4 and POs

PHT-4: Post harvest handling of flowers)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students acquired knowledge on different post harvest treatments, grading and packing techniques for extending shelf life of flowers.			✓	✓
CO2: The main objective is to get idea about drying and preservation methods of commercial flowers.			✓	✓
CO3: They got sufficient knowledge about storage, distillation of essential oil as they have physically visited different cold storage and preservation unit.				✓

## 6.4.5 Agri-Business Management

Table 631: Mapping between COs of ABM-1 and POs

ABM-1: Management of Agro-based industry)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Learning different managerial aspects of Agro-based industries				✓
CO2: Knowledge about the innovative ways to start the new enterprises				✓

Table 632: Mapping between COs of ABM-2 and POs

ABM-2: Marketing Management (Agricultural Import-Export Policy of Govt. of India & Business Laws))				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Learn various aspects of marketing management				✓
CO2: Develop marketing strategies for efficient marketing			✓	✓
CO3: Formulate policy with regard to marketing management.				✓

Table 633: Mapping between COs of ABM-3 and POs

ABM-3: Financial Management of Agri-Business)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students will learn skills on financial management in agribusiness enterprises				✓
CO2: Gain knowledge about the managerial aspects of the agricultural business enterprises				✓
CO3: Able to analyse and apply the financial management tools in agriculture sector.			✓	✓

## 6.4.6 Commercial Agriculture

Table 634: Mapping between COs of CA-1 and POs

CA-1: Commercial floriculture)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Students have learnt about different propagation practices in commercial flowers.	✓			✓
CO2: They have got the idea about different cultural practices followed in annual flowers as they have raised the crop in their practical field.	✓			✓

Table 635: Mapping between COs of CA-2 and POs

CA-2: Commercial fruit production)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Basic concept of production technology along with different varieties and its root-stock of tropical, subtropical and minor fruit crops.	✓			✓
CO2: Different commercial propagation methods with canopy management on fruit crop.	✓			✓
CO3: Different intercultural operations which was suitable for fruit crops.	✓			

Table 636: Mapping between COs of CA-3 and POs

CA-3: Propagation and nursery management of horticultural crops)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: To know about the basic principle in plant propagation of horticultural crops	✓			
CO2: Practical, hand on experience in plant propagation methods	✓			✓
CO3: Principle, practices and skill required in the culture and management of nursery plant	✓			✓

Table 637: Mapping between COs of CA-4 and POs

CA-4: Cultivation of commercially important medicinal & aromatic plants)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: To get practical idea about identification of different medicinal and aromatic plants.	✓			
CO2: To know about the standardized methods for raising nursery of different medicinal and aromatic plants.	✓			✓
CO3: Better knowledge on field preparation and intercultural operation along with different harvesting method and its isolation and extraction process of chemical constituents from medicinal & aromatic plants	✓			✓

Table 638: Mapping between COs of CA-5 and POs

CA-5: Commercial Vegetable Production)				
Course Outcome	PO1	PO2	PO3	PO4
CO1: Basic concepts on nursery management, quality planting material production.	✓			✓
CO2: Identification of different vegetable crops and their varieties	✓			
CO3: To develop knowledge about transplanting of vegetable seedlings in main field, seed extraction, seed production, intercultural operations in case of vegetable crops.	✓		✓	
CO4: To develop knowledge about harvesting, grading, packaging and storage of different vegetable crops.	✓		✓	

## 7 Agricultural Program (5<sup>th</sup> Dean's Committee)

In order to make higher agricultural education relevant to present day needs, produce graduates with entrepreneurial skills for self-employment and contributors of rural livelihood and food security need is felt for reorienting agricultural education. In view of globalization and development of new technologies, it is essential that the students meet international quality standards. One of the pillars for quality assurance in agricultural education is the curriculum, which takes care of contemporary needs, provides for analytical skill, entrepreneurship and experiential learning for having confidence to do profitable farming and contributors of sustainability of agriculture.

### 7.1 Mission of Agricultural Program

Develop skilled human resource for developing sustainable agriculture farming system leading to technological and economic empowerment of practitioner of agriculture.

### 7.2 Objectives of Agricultural Program

- To provide an opportunity to the students to understand the rural setting in relation to agriculture and allied activities.
- To make the students familiar with socio-economic conditions of the farmers and their problems.



- To impart diagnostic and remedial knowledge to the students relevant to real field situations through practical training.
- To develop communication skills in students using extension teaching methods in transfer of technology.
- To develop confidence and competence to solve agricultural problems.
- To acquaint students with on-going extension and rural development programmes.

### **7.3 Program Outcomes**

The following POs are defined for the Agricultural Program (5<sup>th</sup> Dean's Committee).

- PO1: The agricultural graduates will be able to guide the farmers in adoption of recommended package of practices in growing crops/ variety on sole and cropping system mode.
- PO2: They develop practical knowledge in providing location specific solutions to crops with real time management approach in respect to nutrients, water and disease and pests both in agronomical and horticultural crops.
- PO3: They acquire the skill to translate the crop- based scientific recommendation in farmers language and transmit them to the farming community for adoption.
- PO4: They acquire the basic knowledge on different course(s) of their choice related to different specialized disciplines of agricultural sciences to pursue higher education in the field of their interest.
- PO5: They develop knowledge and experience through learning mode to take up entrepreneurship by establishing Integrated Farming System module in holistic manner involving different commodities from crops, livestock and poultry.
- PO6: They acquire knowledge, skill and earn the eligibility to be employed in different sectors of agriculture and allied branches.

## 7.4 Mapping of CO Vs POs

### 7.4.1 B.Sc.(Hons.) Agriculture

Table 639: Mapping between Course Outcomes of AG 111 and POs

AG 111: Fundamentals of Agronomy						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Students can identify and select seasonal crop(s), judging seed good quality, skill to identify different weed flora and their management under different eCourse Outcomesystem.	✓	✓		✓		
CO2: Develops knowledge to Identify fertilizers, can advise farmers the crop based dose and commercial requirement and suitable farm implements for crops under different land types..		✓				
CO3: Students can workout irrigation requirment and can advise farmers on adoption of irrigation methods under varying water resource and availability conditions	✓	✓		✓		

Table 640: Mapping between Course Outcomes of HT 111 and POs

HT 111: Fundamentals of Horticulture						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Basic knowledge about scope and importance and botanical classification of different horticultural crops..	✓					
CO2: This course is able to make easier for the students to understand preparation of different nursery and it's maintenance in horticultural crop.	✓			✓		
CO3: Layout and planning for different horticultural crops.	✓					
CO4: Getting knowledge on modern intercultural operation practiced in horticultural crops.		✓				

Table 641: Mapping between Course Outcomes of SC 111 and POs

SC 111: Fundamentals of Soil Science						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Students will gain knowledge regarding soil physical, chemical and biological properties and processes in relation to plant growth.	✓					
CO2: A brief overview on origin of the earth, rocks and minerals, weathering and soil formation.				✓		
CO3: practical excellence in soil sampling and qualitative analysis of some important soil parameters.	✓					

Table 642: Mapping between Course Outcomes of EE 111 and POs

EE 111: Fundamentals of Agricultural Extension Education						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Principles and methods of extension approach, rural development programs, communication models, programme formulation and evaluation.			✓			
CO2: New trends in agriculture extension: privatization extension..				✓		✓
CO3: Monitoring and evaluation – concept and definition, monitoring, and evaluation of extension programmes. Transfer of Technology- Concept and models..			✓			
CO4: Skill development in handling audio-visual equipments, preparation of presentation.				✓		
CO5: Can learn about agricultural journalism and process of programme production of radio and T. V						✓

Table 643: Mapping between Course Outcomes of AS 111 and POs

AS 111: Statistical Methods						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Brain exercise with basic statistical tools will develop the student's skill.				✓		
CO2: Learn about tools and techniques for preparing and evaluating projects.				✓		
CO3: Knowledge of design and sampling help for future research programme.				✓		

Table 644: Mapping between Course Outcomes of AT 111 and POs

AT 111: Farm Machinery and Power						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Impart knowledge about different farm machineries used and their operation.			✓	✓		
CO2: Maintenance and economics in operation.			✓			
CO3: Repair, maintenance and hiring of tractors through Agro-service centre.					✓	
CO4: Practical oriented skills to use various farm equipments in field.			✓	✓		

Table 645: Mapping between Course Outcomes of SS 111 and POs

SS 111: Comprehension and Communication Skills in English						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: To improve soft skills like communication skills, interpersonal skills, presentation skills etc..				✓		✓
CO2: To learn the skills designed to help the candidates to express themselves better in academic and professional careers..				✓		✓
CO3: To be trained in professional writing with enriched vocabulary and expertise in conversation, interviews, presentations, group discussions etc..				✓		✓
CO4: Students will be able to prepare their curriculum vitae and job applications which will help them in building their professional career.				✓		✓

Table 646: Mapping between Course Outcomes of AG 112 and POs

AG 112: Agriculture Heritage						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: At the end of session the students can blend old and sustainable agril. practices with present day agricultural practices.	✓					
CO2: Students can suggest the old ways and means of farming under poor soil conditions to mitigate the harmful effect of injudicious use of agrochemicals.	✓	✓				
CO3: The back ground knowledge can help the students in higher studies as part of their research programmed.						✓

Table 647: Mapping between Course Outcomes of EE 112 and POs

EE 112: Human Values & Ethics						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Students will appreciate the essential complimentary between values and skills to ensure sustained happiness and prosperity which are the core aspirations of all human beings.				✓		
CO2: The process of self exploration and self awareness will enable the students to evaluate their pre-conditioning and present beliefs.				✓		
CO3: Students will develop a holistic perspective towards life, profession and happiness based on a correct understanding of human reality, human body and rest of the existence.				✓		✓

Table 648: Mapping between Course Outcomes of PRM 111 and POs

PRM 111: Elementary Mathematics						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: To improve an ability to apply mathematics and its application in agriculture and its applied sectors.				✓		
CO2: To learn the skills designed to help and understand the plant and its eCourse Outcomesystem by using mathematics application.				✓		
CO3: Students will be able to prepare and apply the knowledge gained in designing fields.				✓		

Table 649: Mapping between Course Outcomes of PRB 111 and POs

PRB 111: Introductory Biology						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: To improve skills in interpreting the plant organs and describe their roles and mechanism.				✓		
CO2: To learn the skills designed to help the candidates to understand better in the subject related concepts of B.Sc. (Hons.) Agriculture.				✓		
CO3: Students will be able to understand the description of plants and the role of animal in agriculture.				✓		

Table 650: Mapping between Course Outcomes of NSS-111/NCC-111/PE-111 and POs

NSS-111/NCC-111/PE-111: NSS/NCC/Physical education and Yoga practice						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: The social leadership capability will be developed among the students.						✓
CO2: Students will be aware about the social problems, stigmas and make the students capable to tackle them.						✓
CO3: Students will be able to know various programmes related to society and their skills will be enhanced..						✓

Table 651: Mapping between Course Outcomes of AG-123 and POs

AG-123: Introductory Agro-meteorology & climate change						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Students develop the technical know-how on layout of an agricultural meteorological observatory, the instruments required, their installation.				✓		
CO2: Equipped with the knowledge of recording data on weather elements, calculation, tabulation, calculation and their relations vis-a-vis interpretation with crop growth and development.				✓		
CO3: Students will be acquainted with the weather forecast system, and can help the farmers in adopting necessary measures suggested through agro-advisory service.			✓	✓	✓	

Table 652: Mapping between Course Outcomes of AG-124 and POs

AG-124: Introduction to Agroforestry						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Students will be able to know different agroforestry systems for varying agroecological situations and their suitability with conventional agriculture.	✓					
CO2: At the end of session, students will be able to suggest different agroforestry based models in companion with field and horticultural crops and their management.	✓		✓	✓		
CO3: Students can become a part of the team engaged in adoption agroforestry based solution to restore soil health through carbon sequestration and mitigating climate change impact.			✓	✓		

Table 653: Mapping between Course Outcomes of PB-121 and POs

PB-121: Fundamentals of Genetics						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Knowledge on the basic principles of heredity and variation.				✓		
CO2: Understanding on cytogenetics, polyploidy, mutation and gene expression.				✓		
CO3: Development of analytical, quantitative and problem solving skills from classical to molecular genetics.				✓	✓	

Table 654: Mapping between Course Outcomes of HT-122 and POs

HT-122: Production Technology for Fruits and Plantation crops						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Basic knowledge about scope and importance and botanical classification of different horticultural crops..	✓			✓	✓	
CO2: This course is able to make easier for the students to understand preparation of different nursery and its maintenance in horticultural crop.	✓			✓		
CO3: Layout and planning for different horticultural crops.	✓		✓			

Table 655: Mapping between Course Outcomes of SC-122 and POs

SC-122: Agricultural Microbiology						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Knowledge on the principles of microbiology and details of important microorganisms.		✓				
CO2: Appraisal on the role of microorganism in improving soil fertility.		✓				
CO3: Practical experience in extracting the microbes from soil culturing the microbes in the laboratory..		✓		✓		

Table 656: Mapping between Course Outcomes of EN-121 and POs

EN-121: Fundamentals of Entomology						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Students will gain the basic knowledge about external morphology, anatomy, physiology. Students will know about classification of insects up to the level of families with hands-on experience in identifying the families of insects..				✓		
CO2: Knowledge on methods of collection and preservation of insects.				✓		
CO3: Concepts of ecology, basic principles of distribution and abundance of organisms and their causes will be known by all the students. Study life tables, organization of communities, diversity indices. Train students in sampling methodology, calculation of diversity indices, constructing life tables, relating insect population fluctuations to biotic and/or abiotic causes,.		✓		✓		
CO3: All will be familiarized with principles of insect pest management, including concept and philosophy of IPM. Train students in computation of ETL, implementing IPM programmes.		✓		✓		



Table 657: Mapping between Course Outcomes of PP-121 and POs

PP-121: Fundamentals of Plant Pathology						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Acquittance with various laboratory equipments and basic knowledge on laboratory techniques.				✓		
CO2: Knowledge on disease symptoms and identification of various micro-organisms.		✓		✓		
CO3: Basic idea on pesticides, calculations and the method of applications.		✓		✓		

Table 658: Mapping between Course Outcomes of CP-121 and POs

CP-121: Fundamentals of Crop Physiology-I						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Physiology of crops is the fundamental importance as it provides basic knowledge of plant internal functions and various life processes..	✓			✓		
CO2: Provide knowledge regarding different growth parameters and mineral nutrition of plants role in crop growth.	✓	✓		✓		
CO3: Then one can better understand on physiological performances of crops in the field under agro climatic situations to predict yield and productivity.	✓		✓	✓		

Table 659: Mapping between Course Outcomes of AE-121 and POs

AE-121: Fundamentals of Agril.Economics						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Students will learn the basic economic terminology related to major branches.				✓		
CO2: Knowledge about basic working of the Indian economy at micro and macro level..				✓		
CO3: Learn to apply these economic concepts in agricultural sector.				✓		

Table 660: Mapping between Course Outcomes of EE-123 and POs

EE-123: Rural Sociology and Educational Psychology						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Understand concept of rural sociology, its importance in agricultural extension, characteristics of Indian rural society.			✓	✓		
CO2: Understand social groups, social stratification, culture, social values, social control and attitudes.				✓		
CO3: Understand concept of educational psychology, intelligence, personality, perceptions and motivation.				✓		

Table 661: Mapping between Course Outcomes of AG-215 and POs

AG-215: Crop Production Technology-I (Kharif Crops)						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Students will develop knowledge of raising different field crops specific to kharif .	✓		✓	✓		
CO2: Application skills in raising and managing kharif crops scientifically.	✓		✓	✓		
CO3: Scope for agro-entrepreneurship.				✓	✓	

Table 662: Mapping between Course Outcomes of PB-212 and POs

PB-212: Fundamentals of Plant Breeding						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Understanding various modes of reproduction in crop plants and their genetic consequences.	✓			✓		
CO2: Idea on various breeding methods followed for development of superior cultivars.	✓			✓		
CO3: Practical knowledge on emasculation and hybridization techniques in both self & cross pollinated crops for development of hybrids			✓	✓		

Table 663: Mapping between Course Outcomes of HT-213 and POs

HT-213: Production Technology for Vegetables & Spices						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Practical knowledge about raising of vegetable seedlings and production technology in field condition.	✓		✓			
CO2: To get idea for solving field related problems.	✓		✓			
CO3: Better knowledge on field preparation and intercultural operation along with different harvesting method and its maturity stage is the outcome of this course.	✓		✓			

Table 664: Mapping between Course Outcomes of SC-213 and POs

SC-213: Environmental studies and disaster management						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: This course will make the students aware of different environmental concerns like pollution, conservation, etc and will create a pro-environmental attitude				✓		
CO2: Learning about the ways to mitigate important disasters in the World and India in particular.				✓		
CO3: Ability to conduct various qualitative and quantitative tests for waste samples collected from the locality.				✓		

Table 665: Mapping between Course Outcomes of PP-212 and POs

PP-212: Introductory Nematology						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Student acquire the basic knowledge on handling nematological laboratory appliances and develop skill on collection, extraction and identification of nematode.		✓		✓		
CO2: Adequate identification of the symptoms of diseases inflicted by nematodes and take appropriate steps towards developing management strategies		✓	✓	✓		
CO3: Students will know the damage potential and biology of nematode taxa that are parasitic to plants..		✓		✓		

Table 666: Mapping between Course Outcomes of ST-211 and POs

ST-211: Principles of Seed Technology						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Details knowledge about the growth, development and production strategy of different quality seeds.	✓				✓	
CO2: Different Technology used for processing of the seed and long term storage methods for better seed quality.	✓			✓		
CO3: Forecasting of demand of quality seed and market linkage for better availability of seed to the farmer.			✓	✓		

Table 667: Mapping between Course Outcomes of AE-212 and POs

AE-212: Agricultural Finance & Co-operation						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Students will learn skills on financial economics tools used in agricultural finance.				✓	✓	
CO2: Gain knowledge about working of the financial sector of India				✓		✓
CO3: Able to analyse and apply the financial management tools in agriculture sector.			✓	✓	✓	

Table 668: Mapping between Course Outcomes of AT-212 and POs

AT-212: Soil and Water conservation Engineering						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Management of land and water to eradicate the draught condition.	✓			✓		
CO2: Increasing the production and productivity of land for economic upliftment of the people of the area.	✓		✓	✓		
CO3: Control of Soil from water and wind erosion.		✓		✓		
CO3: Knowledge on installation of water harvesting structures.			✓	✓		

Table 669: Mapping between Course Outcomes of AH-211 and POs

AH-211: Livestock and Poultry Management						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Employment as a manager of livestock and poultry farms				✓		✓
CO2: Establishment of independent dairy and poultry farms				✓	✓	
CO3: Manufacturing of cattle and poultry feed.				✓	✓	

Table 670: Mapping between Course Outcomes of AG-226 and POs

AG-226: Crop Production Technology-II (Rabi Crops)						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Students will develop knowledge of raising different field crops specific to Rabi crops .	✓		✓	✓		
CO2: Application skills in raising and managing rabi crops scientifically..	✓	✓		✓		
CO3: Scope for agro-entrepreneurship.				✓	✓	

Table 671: Mapping between Course Outcomes of AG-227 and POs

AG-227: Farming system & Sustainable Agriculture						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Students are acquainted with the concept of farming system and IFS modules for different category of farmers with varying resources to generate year round income.			✓		✓	
CO2:Self employment capability through agro-entrepreneurship development by utilizing the by products from different enterprise.			✓		✓	
CO3:Students can enhance their knowledge as well as develop eco-friendly farming system models in a sustainable manner through resource recycling			✓		✓	

Table 672: Mapping between Course Outcomes of AG-228 and POs

AG-228: Principles of Organic Farming						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:At the end of the session, students will understand organic packages for different crops, organic certification procedure	✓				✓	
CO2:Students will develop their skill to prepare organic products and their application.		✓			✓	
CO3:Develop skills through practical orientation to organic production technologies.			✓		✓	

Table 673: Mapping between Course Outcomes of PB-223 and POs

PB-223: Intellectual Property Rights						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Exposure to various types intellectual property rights.				✓		
CO2:A detailed idea on patenting process				✓		
CO3:Knowledge on protection of plant varieties under UPOV and PPV & FR Act of India, Plant breeders rights, and farmers rights.			✓			

Table 674: Mapping between Course Outcomes of HT-224 and POs

HT-224: Production Technology for ornamental , Medicinal and Aromatic Plants						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:To get practical idea about identification of different ornamental, medicinal and aromatic plants	✓			✓		
CO2:To know about the standardized methods for raising nursery of different flowers and medicinal and aromatic plants.	✓			✓		
CO3:Better knowledge on field preparation and intercultural operation along with different harvesting method and its isolation and extraction process of chemical constituents from medicinal & aromatic plants.	✓		✓		✓	

Table 675: Mapping between Course Outcomes of SC-224 and POs

SC-224: Problematic soils and their management						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Knowledge about soil quality, health, distribution of waste land and problem soils in India.				✓		✓
CO2: Categorization and management of wastelands to be utilised effectively				✓		
CO3: Understanding the quality and standards of irrigation water, bio remediation and land capability and land suitability classification.		✓				

Table 676: Mapping between Course Outcomes of PP-223 and POs

PP-223: Principles of Integrated Pest and Disease management						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
"CO1: Acquire knowledge of pest surveillance and develop models for disease forecasting. "		✓		✓		
CO2: Student will know about proper detection and diagnosis of pest and diseases.		✓				
CO3: Assessment of disease intensity, determination of various injury levels and crop yield loss.	✓	✓	✓			
CO4: Development of different IPM modules for management of different pests and their application		✓	✓	✓		
CO5: Acquire knowledge about mass multiplication of various important biocontrol agents.		✓	✓			

Table 677: Mapping between Course Outcomes of ST-222 and POs

ST-222: Seed Production and Testing						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Details knowledge about the foundation and certified seed production techniques of OPVs and hybrids.	✓				✓	
CO2:Different seed testing methods used for quality seed production.	✓			✓		
CO3:Chemical, biochemical, molecular methods used for genetic purity testing.	✓			✓		
CO4:Knowledge regarding different health testing methods for identification of seed borne diseases		✓				

Table 678: Mapping between Course Outcomes of CP-222 and POs

CP-222: Fundamentals of Crop Physiology-II						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Details knowledge about the physiology of seed development, maturation and changes during seed development	✓					
CO2:Knowledge regarding maturity indices, dormancy, seed quality parameters and factors affecting quality of seed and crop.	✓			✓		
CO3:One can better understand the concepts of physiological and biochemical changes during a seed life to a mature and during post-harvest changes.			✓	✓		

Table 679: Mapping between Course Outcomes of AE-223 and POs

AE-223: Agricultural Marketing, Trade & Prices						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Students will learn the use of price analysis tools for agricultural market prices.			✓	✓		
CO2:Knowledge about practical application of marketing and price analysis tools in policy making.				✓		✓
CO3:Develop an understanding on the working of markets from local to global level.				✓		✓



Table 680: Mapping between Course Outcomes of AS-222 and POs

AS-222: Agri-informatics						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Establishment of consultancy farm					✓	
CO2:Helping farmers in smart way			✓			

Table 681: Mapping between Course Outcomes of AT-223 and POs

AT-223: Renewable Energy and Green Technology						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Knowledge on different energy sources				✓		
CO2:Select appropriate energy technologies to meet the energy demand of the state in agriculture except the use of hydro power energy			✓	✓		
CO3:It will enable students to understand the concepts in the production process of biodiesel, bio-fuels and briquettes				✓	✓	

Table 682: Mapping between Course Outcomes of AE-224 and POs

AE-224: Agri-Business Management						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Students will learn the management aspect of agricultural businesses.			✓		✓	✓
CO2:Gain knowledge directly from business economics to evaluate projects and new ventures in agricultural sector.			✓		✓	
CO3:Able to set up projects on agricultural business management.					✓	

Table 683: Mapping between Course Outcomes of SC-225 and POs

SC-225: Agro-Chemicals						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:This course will give both theoretical and practical experience to students about agrochemicals, their type and role in agriculture, management of agrochemicals for sustainable agriculture.		✓	✓			
CO2:They will be aware of pesticides with reference to their classification, structure, mode of action, synthesis and formulations and quality		✓		✓		
CO3:Knowledge on Fertilizers, their manufacturing process, quality and their importance.		✓		✓	✓	

Table 684: Mapping between Course Outcomes of AG-229 and POs

AG-229: Weed management						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Students are enriched with recent developments in herbicide , their selectivity and mode of action, resistance development etc.		✓				
CO2:Students will develop knowledge to select crop specific herbicides, their use, dose calculation and safe handling.		✓	✓	✓		
CO3:Students can know the critical crop weed competition period, possible phyto-toxicity and residual effects of herbicides in different crops under different crop agro-ecological systems.	✓	✓		✓		

Table 685: Mapping between Course Outcomes of AG-311 and POs

AG-311: Practical Crop Production-I (Kharif Crops)						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Students will gain the knowledge of selecting good quality seeds, manures, fertilizers, plant protection chemicals, farm machineries and irrigation management for different field crops in rainfed and irrigated farming.	✓	✓				
CO2:Students will get the benefit of imparting training to the farmers and farm women in their practical life after entering to the service at the state government and central government.			✓			✓
CO3:Students can recommend scientific based crop management practices for different crops under varying farming situations both for resource poor and resource rich farmers.	✓		✓			

Table 686: Mapping between Course Outcomes of PB-314 and POs

PB-314: Crop Improvement-I (Kharif Crops)						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Getting idea on Plant genetic resources, its utilization and conservation				✓		
CO2:Exposure to various conventional and modern plant breeding methods for the improvemet of important kharif crops.	✓			✓		
CO3:Visit to seed production plots, AICRP plots of different field crops and getting a practical knowledge on hybrid development.				✓		

Table 687: Mapping between Course Outcomes of PB-315 and POs

PB-315: Fundamentals of Plant Biotechnology						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Getting acquainted with various types micro-propagation methods and their application in crop improvement	✓			✓		
CO2: Idea on recombinant DNA technology and various methods of gene transfer.				✓		
CO3: Exposure to the field of oftransgenics and their application in crop improvement	✓					
CO4: Knowledge on various types of marker systems and their application in in crop improvement.	✓			✓		

Table 688: Mapping between Course Outcomes of HT-315 and POs

HT-315: Post-harvest management and Value addition of Fruits & Vegetables						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: To get some idea about different post-harvest practices likes sorting, grading and packaging.			✓			
CO2: To get idea about different storage house and its method of storage in Fruits and Vegetables			✓			
CO3: Preparation of different value added product like jam, jelly, sauce, ketch up, chips, RTS, pickle etc.					✓	

Table 689: Mapping between Course Outcomes of SC-316 and POs

SC-316: Geo-informatics, nano technology and precision farming						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Basic knowledge on fundamentals of geoinformatics, its application in precision farming and fertiliser recommendation approaches.	✓	✓		✓		
CO2:Adequate information on nanotechnology, its concept, different commercial nano-formulations and their practical utility in seed, water, fertilizer and plant protection		✓		✓		
CO3:Hand-on skill on use of various GIS database and softwares to generate thematic maps.			✓	✓		
CO4:Woking experience on handling of GPS hardware for real-time access of time and positional information.			✓	✓		

Table 690: Mapping between Course Outcomes of SC-317 and POs

SC-317: Fundamentals of Plant Biochemistry						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Theoretical experience on the elementary knowledge on structure and functions of biomolecules.		✓		✓		
CO2:They will get a brief overview of the metabolism of the biomolecules.				✓		
CO3:Practical excellence in determining the important biomolecules through different analytical methods.				✓		✓

Table 691: Mapping between Course Outcomes of EN-312 and POs

EN-312: Pests of crops and stored grain and their management						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:The students will be familiarized about symptoms, nature of damage and seasonal incidence of insect pests that cause loss to major crops.		✓				
CO2:Students will know effective management of harmful pests by different methods and also know the economic aspect of IPM techniques which will be further useful.		✓	✓			

Table 692: Mapping between Course Outcomes of PP-314 and POs

PP-314: Diseases of field and horticultural crops and their management-I						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Development of knowledge on diagnosing different diseases of field and horticultural crops based on the symptoms expressed in the field.		✓	✓			
CO2:Acquire the skill of collection and preservation of diseased specimens				✓		
CO3:Development management strategies to tackle the diseases in Kharif Season.		✓	✓			

Table 693: Mapping between Course Outcomes of EE-314 and POs

EE-314: Communication Skills and personality development						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Develop effective communication skills (spoken and written)				✓		✓
CO2:Develop effective presentation skills				✓		✓
CO3:Become self confident individuals by mastering interpersonal skills, team management skills which will help them in their job life in future.				✓		✓
CO4:Development of all round personalities with mature outlook to function effectively in different circumstances				✓		✓
CO5:Write papers, proposals, reports etc. which will also help them in achieving their academic degree.				✓		✓
CO6:They will be able to appreciate any piece of writing and comprehend it				✓		✓

Table 694: Mapping between Course Outcomes of EN-313 and POs

EN-313: Bio-pesticides and Bio-fertilisers						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:This course will impart knowledge to the students on the fundamental knowledge on classification, production, application and quality control of biopesticides		✓	✓			
CO2:Knowledge on classification, preparation method and quality control of biofertilizer.		✓				
CO3:Practical exposure isolation, purification and quality control of biopesticides and mass multiplication of biofertilizers.		✓			✓	

Table 695: Mapping between Course Outcomes of AT-314 and POs

AT-314: Protected Cultivation						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1 CO1:Knowledge on design of green house for raising high value crops	✓					
CO2:Enhancement of economic condition of the green house entrepreneurs on production of quality products			✓			
CO3:Knowledge on Growing off-season, medicinal, aromatic and ornamental crops to boost the development demand of the society	✓		✓			
CO4:Self employment for educated youth in farm sector can be increased					✓	

Table 696: Mapping between Course Outcomes of PB-316 and POs

PB-316: Commercial Plant Breeding						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Exposure to the principles and techniques of quality seed production in various crops; their maintenance, release and notification system.	✓					
CO2:Learning techniques in hybrid seed production using male-sterility in field crops.	✓			✓		
CO3:Knowledge on DUS testing and registration of varieties under PPV & FR Act				✓		

Table 697: Mapping between Course Outcomes of EE-315 and POs

EE-315: Agricultural Journalism						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Knowledge and skill writing news/magazine articles				✓		✓
CO2: Students will be able to analyze various aspects of agricultural journalism. conceptual knowledge about gathering various sources of agricultural information, organizing the materials and treatment of the stories.				✓		✓
CO3: Students would also gain knowledge about the editorial mechanics of copy reading, proof reading, lay outting etc.				✓		✓

Table 698: Mapping between Course Outcomes of AG-321 and POs

AG-321: Rainfed Agriculture and Watershed Management						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Students will develop working knowledge in managing soil and crops under rainfed condition.	✓					
CO2: Students will be able to use technical skills develop their own skill for better management of crops and soil in different watersheds based on rainfall characteristics	✓		✓			
CO3: Students will learn to coordinate with line departments in managing the crops under aberrant weather conditions and develop alternate crop plan.	✓					



Table 699: Mapping between Course Outcomes of AG-322 and POs

AG-322: Practical Crop production-II (Rabi Crops)						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Students will gain the knowledge of selecting good quality seeds, manures, fertilizers, plant protection chemicals, farm machineries and irrigation management for different field crops in rainfed and irrigated farming.	✓	✓				
CO2:Students will get the benefit of imparting training to the farmers and farm women in their practical life after entering to the service at the state government and central government.			✓			✓
CO3:Students can recommend scientific based crop management practices for different crops under varying farming situations both for resource poor and resource rich farmers.	✓		✓			

Table 700: Mapping between Course Outcomes of PB-327 and POs

PB-327: Crop Improvement-II (Rabi Crops)						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Getting idea on Plant genetic resources, its utilization and conservation.				✓		
CO2:Exposure to various conventional and modern plant breeding methods for the improvemet of important rabi crops.	✓			✓		
CO3:Visit to seed production plots, AICRP plots of different field crops and getting a practical knowledge on hybrid development.				✓		

Table 701: Mapping between Course Outcomes of SC-328 and POs

SC-328: Manures, Fertilizers and Soil Fertility Management						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Students will understand the role of fertilizers and manures in supplying nutrients to plants so as to achieve high fertilizer use efficiency.		✓				
CO2:They will have an overall idea on preparation of organic manures and composts which is needed for sustainable agriculture		✓			✓	
CO3:Evaluation soil fertility by using suitable methods.	✓					
CO4:Analysis and recommendation some of the essential nutrients in soil and plants.		✓	✓			

Table 702: Mapping between Course Outcomes of EN-324 and POs

EN-324: Management of beneficial insects						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Students will able to know the basic knowledge regarding the biology and basic concepts of apiculture, sericulture and lac culture			✓	✓	✓	
CO2:Students will know the techniques and tools of apiculture, sericulture and lac culture and the commercial aspects which will helpful to create employability.			✓		✓	✓

Table 703: Mapping between Course Outcomes of PP-325 and POs

PP-325: Diseases of field and horticultural crops and their management-II						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Development of knowledge on diagnosing different diseases of field and horticultural crops based on the symptoms expressed in the field		✓				
CO2:Acquire the skill of collection and preservation of diseased specimens				✓		
CO3:Development management strategies to tackle the diseases in rabi season.		✓	✓			

Table 704: Mapping between Course Outcomes of AE-325 and POs

AE-325: Farm Management, Production and Resource Economics						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Students will have a detailed understanding about inputs and outputs in agriculture, agricultural and natural resource management.		✓				
CO2:Knowledge about combination of inputs/outputs in production process, how can they be adjusted for optimized resource use and better profits		✓				
CO3:Able to understand and formulate farm plans through various farm management and optimization skills					✓	

Table 705: Mapping between Course Outcomes of EE-326 and POs

EE-326: Enterpreneureship development and Communication						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1 CO1:Understand theories of entrepreneurship and business development					✓	
CO2: Be able to state, understand and evaluate the key factors needed to develop a successful business					✓	
CO3:Describe the concepts of entrepreneurship, agri-preneurship, characteristics of entrepreneur, motivation and entrepreneurship and project management					✓	
CO4:gain knowledge and skills in project formulation, project report preparation and evaluation of projects					✓	
CO5:explain entrepreneurship development programme, government policies, schemes and incentives for promotion of entrepreneurship and social responsibility of business					✓	
CO6:Develop the skills of an effective manager through simulated exercises on communication skills					✓	
CO7:Get opportunities for agrientrepreneurship and rural enterprise					✓	

Table 706: Mapping between Course Outcomes of AT-325 and POs

AT-325: Protected cultivation and Secondary Agriculture						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:To impart knowledge on design and construction of green house under controlled system and their maintenance				✓	✓	
CO2:It will enable students to understand the concepts on different engineering properties of food materials in application of Post harvest equipment				✓	✓	
CO3:A brief knowledge on equipments used for drying of agricultural produces			✓	✓		
CO4:Knowledge on Material handling equipments, their principle, working and selection			✓	✓		

Table 707: Mapping between Course Outcomes of HT-326 and POs

HT-326: Hi-tech Horticulture						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Modern nursery management and mechanisation on micro and protected cultivation techniques.	✓	✓		✓	✓	
CO2:Regarding GIS, DGPS, VRA and precision farming.				✓		
CO3:Regarding micropropagation, EC and pH based fertilizer scheduling.		✓		✓	✓	
CO4:To study about canopy management and high density planting for higher yield and economy.	✓			✓		

Table 708: Mapping between Course Outcomes of HT-327 and POs

HT-327: Land Scaping						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Students are able to identify different flowering and foliage trees, shrubs, annuals, pot pants used for different landscaping purposes like avenue plantation, hedge, edge, shrubbery, borders, beds etc.	✓					✓
CO2:Different tools and implements used in landscape design are being identified by the students.				✓		
CO3:As the students are physically visited different gardens and parks within the city they are able to distinguish different styles of garden				✓		

Table 709: Mapping between Course Outcomes of AG-323 and POs

AG-323: Water management						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Students will be acquainted with managing irrigation water in different crops for higher irrigation and field efficiency		✓		✓		
CO2:Students will be able to recommend suitable water saving technologies and irrigation methods with an aim to produce more crop per drop.		✓	✓			
CO3:Students can adopt scientific based irrigation scheduling in crops and cropping systems as part of their entrepreneurship with an approach on high-tech agriculture.		✓			✓	

Table 710: Mapping between Course Outcomes of PB-328 and POs

PB-328: Micropropagation Technology						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Knowledge and practical skills on different plant tissue culture techniques for crop improvement.	✓			✓		
CO2: Getting acquainted with the use of various equipment in tissue culture Laboratory				✓		
CO3: Entrepreneurship development through in-vitro production of secondary metabolites, like perfumery, pharmaceutical, botanical pesticide etc.					✓	

Table 711: Mapping between Course Outcomes of RAWEP-411 and POs

RAWEP-411: Rural Agricultural Work Experience						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1: Team work and build competency in understanding real life situations					✓	
CO2: They can learn about management of different components, problem solving attitude.						✓
CO3: Develop art of creative thinking, time management, art of listening, positive use of feedback, observation power, managing conflicts, working of local institutions, working with other organizations etc.						✓
CO4: Students will acquaint with on-going extension and rural development programmes			✓			

Table 712: Mapping between Course Outcomes of EL-421 and POs

EL-421: Production Technology for Bio-agents and Bio-fertilizer						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Ability to understand laboratory equipments and conditions required for producing bioagents and biofertilizers on commercial scale.		✓			✓	
CO2:Acquaintance with the isolation and characterization of important microorganisms involved to control plant pests.		✓		✓		
CO3:Students will be able to isolate, purify and maintain the laboratory culturesofdifferent biofertilizers and understand their role in soil fertility and crop production		✓		✓	✓	

Table 713: Mapping between Course Outcomes of EL-422 and POs

EL-422: Seed Production and Technology						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Adequate practical knowledge on seed production of both OPVs and Hybrids.	✓					
CO2:Provide knowledge regarding seed quality control and seed quality enhancement techniques	✓					
CO3:Visit to different seed processing units and seed production plots will enable students to involve themselves in both public and private sector seed enterprises.				✓		✓

Table 714: Mapping between Course Outcomes of EL-423 and POs

EL-423: Mushroom Cultivation Technology						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Basic knowledge on commercially grown mushroom			✓		✓	
CO2:Knowledge on Preparation of mother culture, spawn, substrate etc to develop entrepreneurship			✓		✓	
CO3:Knowledge on economics and constraints of mushroom cultivation				✓		

Table 715: Mapping between Course Outcomes of EL-424 and POs

EL-424: Soil, Plant, Water and Seed Testing						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:It may possible to predict nutritional disorders before the appearance of visual symptoms in the plant tissue and helpful to determine the effects of nutrient addition on the nutrient supply to the plant.		✓				
CO2:Study the relationship between nutrient status of the plant and crop performance.		✓		✓		
CO3:By the end of these practical exercises, the students will be able to analyse various soil, plant, water and seed testing parameters which are important for agriculture.		✓				✓

Table 716: Mapping between Course Outcomes of EL-425 and POs

EL-425: Commercial Horticulture						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Outcome of this subject is use and its formulation and preparation of plant growth regulators		✓		✓		
CO2:Identification of nutrient deficiencies; Identification of physiological disorders;		✓				
CO3:Harvest indices and maturity standards; Post-harvest handling and storage, marketing; Seed extraction	✓			✓		
CO4:Course Outcomest of cultivation for tropical and subtropical vegetable crops	✓					
CO5: Project preparation for commercial cultivation of horticultural crops.				✓	✓	



Table 717: Mapping between Course Outcomes of EL-426 and POs

EL-426: Floriculture and Landscaping						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Students will be able to identify the commercial flower crop both for cut and loose flower purpose	✓					
CO2:Students will be able to draw a sketch and apply the same practically in the field for layout and planning of a Garden.				✓		✓
CO3:They can gain knowledge regarding different modern cultivation practices for growing flower and foliage crop.	✓					

Table 718: Mapping between Course Outcomes of EL-427 and POs

EL-427: Agriculture Waste Management						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1:Proper utilisation/management of agricultural wastes/byproducts/animal wastes				✓		
CO2:Students can be self employed in making bio-composts, building materials, feed materials for animals etc.					✓	
CO3:The students can be engaged as consultants/service providers for composting and water treatment plants		✓			✓	
CO4:Waste management helps to maintain a healthy environment of the region				✓		

Table 719: Mapping between Course Outcomes of EL-428 and POs

EL-428: Organic Production Technology						
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6
CO1 CO1:Students can adopt the practices related to organic farming can demonstrate the preparation of organic formulations in crop, cropping systems and farming systems along with the procedure used for organic certification.	✓			✓		
CO2:Students will develop their skill to prepare organic products and their application					✓	
CO3:Develop skills through practical orientation to organic production technologies	✓				✓	

## **8 Medical Program**

The undergraduate medical education program is designed with a goal to create an “Indian Medical Graduate” (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant. To achieve this, the following national and institutional goals for the learner of the Indian Medical Graduate training program are hereby prescribed.

### **8.1 National Goal**

At the end of undergraduate program, the Indian Medical Graduate should be able to:

- (a) Recognize “health for all” as a national goal and health right of all citizens and by undergoing training for medical profession fulfill his/her social obligations towards realization of this goal.
- (b) Learn every aspect of National policies on health and devote herself/himself to its practical implementation.
- (c) Achieve competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.
- (d) Develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.
- (e) Become exemplary citizen by observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

### **8.2 Institutional Goals**

In consonance with the national goals, each medical institution should evolve institutional goals to define the kind of trained manpower (or professionals) they intend to produce. The Indian Medical Graduates coming out of a medical institute should:

- (a) be competent in diagnosis and management of common health problems of the individual and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.

- (b) be competent to practice preventive, promotive, curative and rehabilitative medicine in respect to the commonly encountered health problems.
- (c) appreciate rationale for different therapeutic modalities, be familiar with the administration of the "essential drugs" and their common side effects.
- (d) be able to appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.
- (e) possess the attitude for continued self learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.
- (f) be familiar with the basic factors which are essential for the implementation of the National Health Programs including practical aspects of the following:
  - (i) Family Welfare and Maternal and Child Health (MCH);
  - (ii) Sanitation and water supply;
  - (iii) Prevention and control of communicable and non-communicable diseases;
  - (iv) Immunization;
  - (v) Health Education;
  - (vi) Indian Public Health Standards (IPHS) at various level of service delivery;
  - (vii) Bio-medical waste disposal; and
  - (viii) Organizational and or institutional arrangements.
- (g) acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, General and hospital management, principal inventory skills and counseling.
- (h) be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures.
- (i) be able to work as a leading partner in health care teams and acquire proficiency in communication skills.
- (j) be competent to work in a variety of health care settings.
- (k) have personal characteristics and attitudes required for professional life including personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

### **8.3 Goals for the Learner**

In order to fulfil this goal, the Indian Medical Graduate must be able to function in the following roles appropriately and effectively:-

- (a) Clinician who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.
- (b) Leader and member of the health care team and system with capabilities to collect, analyze, synthesize and communicate health data appropriately.
- (c) Communicator with patients, families, colleagues and community.
- (d) Lifelong learner committed to continuous improvement of skills and knowledge.
- (e) Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community and profession.

## 8.4 Competency Based Learning

Competency based learning would include designing and implementing medical education curriculum that focuses on the desired and observable ability in real life situations. In order to effectively fulfil the roles listed above, the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation.

1. Clinician, who understands and provides preventive, promotive, curative, palliative and holistic care with compassion
  - Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioral and social perspective.
  - Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioural and social perspective.
  - Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence health care.
  - Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.
  - Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease identification, disease prevention and health promotion.
  - Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and values.

- Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.
- Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.
- Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.
- Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frameworks.
- Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.
- Demonstrate ability to prescribe and safely administer appropriate therapies including nutritional interventions, pharmacotherapy and interventions based on the principles of rational drug therapy, scientific validity, evidence and cost that conform to established national and regional health programmes and policies for the following:
  - \* Disease prevention,
  - \* Health promotion and cure,
  - \* Pain and distress alleviation, and
  - \* Rehabilitation and palliation.
- Demonstrate ability to provide a continuum of care at the primary and/or secondary level that addresses chronicity, mental and physical disability.
- Demonstrate ability to appropriately identify and refer patients who may require specialized or advanced tertiary care.
- Demonstrate familiarity with basic, clinical and translational research as it applies to the care of the patient.

## 2. Leader and member of the health care team and system

- Work effectively and appropriately with colleagues in an inter-professional health care team respecting diversity of roles, responsibilities and competencies of other professionals.
- Recognize and function effectively, responsibly and appropriately as a health care team leader in primary and secondary health care settings.
- Educate and motivate other members of the team and work in a collaborative and collegial fashion that will help maximize the health care delivery potential of the team.
- Access and utilize components of the health care system and health delivery in a manner that is appropriate, cost effective, fair and in compliance with the national health care priorities and policies, as well as be able to collect, analyze and utilize health data.

- Participate appropriately and effectively in measures that will advance quality of health care and patient safety within the health care system.
  - Recognize and advocate health promotion, disease prevention and health care quality improvement through prevention and early recognition in
    - \* life style diseases
    - \* cancer, in collaboration with other members of the health care team
3. Communicator with patients, families, colleagues and community
    - \* Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients in a language that the patient understands and in a manner that will improve patient satisfaction and health care outcomes.
    - \* Demonstrate ability to establish professional relationships with patients and families that are positive, understanding, humane, ethical, empathetic, and trustworthy.
    - \* Demonstrate ability to communicate with patients in a manner respectful of patient's preferences, values, prior experience, beliefs, confidentiality and privacy.
    - \* Demonstrate ability to communicate with patients, colleagues and families in a manner that encourages participation and shared decision making.
  4. Lifelong learner committed to continuous improvement of skills and knowledge
    - \* Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.
    - \* Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.
    - \* Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning.
    - \* Demonstrate ability to search (including through electronic means), and critically reevaluate the medical literature and apply the information in the care of the patient.
    - \* Be able to identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.
  5. Professional who is committed to excellence, is ethical, responsive and accountable to patients, community and the profession
    - \* Practice selflessness, integrity, responsibility, accountability and respect.
    - \* Respect and maintain professional boundaries between patients, colleagues and society.
    - \* Demonstrate ability to recognize and manage ethical and professional conflicts.

- \* Abide by prescribed ethical and legal codes of conduct and practice.
- \* Demonstrate a commitment to the growth of the medical profession as a whole.

## **8.5 Subject-wise outcomes**

Subject-wise outcomes so called “sub-competencies” that must be achieved at the end of instruction in that subject. Outcomes (competencies) in each subject are grouped according to topics number-wise. It is important to review the individual outcomes (competencies) in the light of the topic outcomes as a whole. For each competency outlined - the learning domains (Knowledge, Skill, Attitude, Communication) are identified. The expected level of achievement in that subject is identified as – [knows (K), knows how (KH), shows how (SH), perform (P)]. As a rule, ‘perform’ indicates independent performance without supervision and is required rarely in the pre-internship period. The outcome is a core (Y - must achieve) or a non-core (N - desirable) outcome. The learning objectives are derived from competencies.

## **8.6 Competency Based Education**

Competency based education has been defined as an outcome-based approach to the design, implementation, assessment and evaluation of a medical education program using an organizing framework of competencies. Much more than a different style of teaching, competency based curriculum obligates a vastly different perspective on assessment. It mandates greater emphasis on setting up an ongoing and longitudinal assessment so that teachers can identify the stage of the learner and decide whether they need further or different learning opportunities to acquire competency. Assessment in competency based curriculum plays a crucial role in its implementation.

Competency is not an all or none phenomenon. Rather it is incremental. The role of teachers is to help the learner acquire and improve upon the competencies. Competency based curriculum moves away from time bound education and looks at competency as the end point. Consequently, we are no longer interested in demonstration of discrete

behaviours by the learners; rather we are interested in application of these in each patient context. Thus, it is more about integration of the required knowledge, skills and attitudes rather than anyone of them in isolation. Therefore, assessment in competency based curriculum should incorporate integration to the extent feasible while maintaining subject identity.

Major characteristics of competency based assessment are their longitudinal nature, provision of developmental feedback and authentic settings, all of which result in lowering the stakes on individual assessments. This has other important implications also for assessment design. Since the stakes are low and purpose is to improve learning, high standardization and psychometric rigor is not required. Authenticity of assessment task is more important than its structure or objectivity. Expert subjective judgment plays a major role in assessment of competencies. This difference in perspective stems from three important characteristics of competency based curriculum. First, that by definition, teaching and assessment has to be in the context of competencies. Second, that discrete assessment of knowledge, skills and attitudes may not always add up to a competency. Third and probably the most important, that there is a high context specificity in assessment.

Assessment requires specification of measurable and observable entities. This could be in the form of whole tasks that contribute to one or more competencies or assessment of a competency per se. Another approach is to break down the individual competency into learning objectives related to the domains of knowledge, skills, attitudes, communication etc. and then assess them individually. However, as stated earlier, using individual domain framework may not always result in making an accurate assessment of the specific competency. Therefore, efforts should be made to include competencies in the assessment process as much as possible. The assessment opportunities can be broadly divided into ongoing and term end. While the term end examinations (Summative assessment) will usually be conducted by the Universities, the ongoing assessments are conducted by the teachers teaching the subject and can be both formal and informal. The summative assessment e.g. University examinations at the end of professionals, are used for pass or fail decision. The purpose of such assessments is to sample the learning



and ensure quality. While assessment will continue to be subject based, efforts must be made to ensure that phase appropriate correlates are assessed to determine if the learner has internalised and integrated the concept and its application. For competency based assessment, each goal stated in aforementioned Section 8.1&8.2 have to be satisfied. Following the competency based assessment, the Subject Competencies (Course outcomes), Program Outcome(s) and Program Specific Outcome(s) and their mappings are provided in the succeeding section.

## **8.7 Program Outcomes for MBBS Program**

There are five program outcomes for the MBBS program

- PO1. Recognize 'health for all' as a national goal and health right of all citizens and should fulfill their social obligations towards realization of this goal.
- PO2. Learn every aspect of national policies on health and devote them to its practical implementation.
- PO3. Competent in practice of holistic medicine, including promotive, preventive, curative and rehabilitative aspects of common diseases.
- PO4. Develop scientific temper, acquire educational experience for expertise in profession and promote healthy living.
- PO5. Become an exceptional citizen by observation of medical ethics and fulfilling social and professional obligations, according to the national aspirations.

## **8.8 Program Outcomes for MD/DM/MS/MCh Program**

The following twelve POs are stated for MD/DM/MS/MCh program based on the competency based education:

- PO1: Adequate understanding of the basic sciences relevant to the concerned specialty.
- PO2: Identify and consider social, economic, and emotional determinants of health in a given case, during the planning of therapeutic, rehabilitative, preventive and primitive strategies.
- PO3: Diagnose and manage majority of the conditions in the specialty concerned on the basis of clinical assessment, and appropriately selected and conducted investigations.

- PO4: Plan and advice measures for the prevention and rehabilitation of patients suffering from disease and disability related to the specialty.
- PO5: Skills in the documentation of individual case details as well as morbidity and mortality rate relevant to the assigned situation.
- PO6: Organize and supervise the assigned health care services demonstrating adequate managerial skills in the clinic/hospital/field situation.
- PO7: Practice the specialty concerned ethically and in step with the principles of primary health care.
- PO8: Demonstrate empathy and human approach towards patients and their families and exhibit interpersonal behavior in accordance with the societal norms and expectations.
- PO9: Develop skills as a self-directed learner, recognize continuing education needs; select and use appropriate learning resources.
- PO10: Competence in basic concepts of research methodology and epidemiology, and be able to critically analyze relevant published research literature.
- PO11: Skills in using educational methods and techniques as applicable to the teaching of medical/nursing students, general physicians and paramedical health workers.
- PO12: Implementation of national health program, effectively and responsibly.

## 8.9 Mapping of CO Vs (POs & PSOs)

### 8.9.1 Bachelor of Medicine and Bachelor of Surgery (MBBS)

Table 720: Mapping between COs of MBAN and POs

MBAN:Anatomy					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1:Attain comprehensive knowledge of gross and microscopic structures in the human body	✓		✓		
CO2:Attain comprehensive understanding of development of the human body		✓		✓	
CO3:Competency to identify the normal disposition, gross structure and clinically relevant interrelationships of various structures in the human body and comprehend the functional correlations, and cross-sectional anatomy, so as to apply the knowledge of the same in medical and surgical scenarios		✓	✓		✓
CO4:Ability to mark the topography of clinically relevant structures on the living body and understand the contextual relevance of surface anatomy and radiological interpretations				✓	✓
CO5:Competence to identify the microscopic structure of various tissues and organs in the human body and correlate the structure with the functions as a prerequisite for understanding their pathology in disease	✓	✓			
CO6:Ability to work as a team following professional etiquette and demeanor towards self, peers and guides/ facilitators	✓			✓	✓

Table 721: Mapping between COs of MBPY and POs

MBPY: Physiology					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Ability to describe the structure of cell membrane. Ability to discuss the classification of muscles-Morphology of skeletal muscle and mechanisms of muscle contraction				✓	
CO2: Ability to explain the Morphology and properties of a neuron and Neuroglia. Able to discuss action potential and Nerve injuries				✓	
CO3: Ability to discuss the Body fluid compartments, Homeostasis, Plasma proteins, RBC, WBC, Platelets, Coagulation of Blood, Blood Group, Lymph and Tissue fluid				✓	
CO4: Ability to explain Mechanism of Breathing, surfactant, Ventilation, Pulmonary Circulation, Transport of gases, Regulation of respiration, Hypoxia, exercise, artificial respiration				✓	
CO5: Ability to describe Functional anatomy of heart and blood vessels, Properties of Cardiac muscle, Cardiac cycle, Normal ECG, Cardiac output, Haemodynamics, Blood pressure, Regional circulation, Shock				✓	
CO6: Ability to discuss organization of different organ systems and their functions	✓				
CO7: Ability to perform common hematological tests and interpret the results		✓		✓	
CO8: Ability to perform common human physiology experiments and interpret the results					✓

Table 722: Mapping between COs of MBBI and POs

MBBI: Biochemistry					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Adequate knowledge about the cell and sub cellular organelles, membrane transport, Extracellular matrix and protein sorting, acid base disorders, ETC, chemistry of biomolecules, Enzymes and Clinical enzymology	✓		✓		
CO2: Sufficient Knowledge about the vitamins, minerals, digestion and absorption of nutrients, metabolism of biomolecules and inborn errors, integration of metabolism		✓		✓	
CO3: Describe the structure and function of Hemoglobin, abnormal Hb, Hb disorders, function tests- LFT, TFT, RFT, AFT, plasma proteins, and fluid and electrolyte balance			✓		✓
CO4: Understanding of molecular biology- DNA organization, replication and repair, transcription, translation, mutation & oncogenesis, regulation of gene expression, Molecular techniques and gene therapy				✓	
CO5: Explain immunology, biochemistry of AIDS, metabolism of xenobiotics, hormonal action, biochemistry practicals- detection of biomolecules, waste management, lab data interpretation, quantitative analysis of biochemical parameters	✓	✓			✓

Table 723: Mapping between COs of MBPA and POs

MBPA: Pathology					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Comprehensive knowledge of the causes and mechanisms of disease			✓	✓	
CO2: Understanding of the various processes and their mechanisms which govern general pathology and the ability to apply the knowledge to disorders arising in the major organ systems			✓	✓	
CO3: Knowledge of the epidemiology, gross and microscopic features, as well as the presentation, the natural history and complications of diseases when untreated				✓	
CO4: Knowledge of the basic pathology in blood disorders, identify and interpret the tests			✓	✓	
CO5: Application of the knowledge of disease mechanisms and processes to the unique patient at hand in the clinicopathological correlations	✓		✓	✓	
CO6: Competency to identify, perform and interpret the different diagnostic tests in clinical pathology	✓			✓	
CO7: Knowledge of the basics of transfusion medicine to enable him/her to perform basic tests, order appropriate blood products and recognize laboratory support in adverse reactions			✓	✓	✓
CO8: Knowledge of how to perform autopsy and correlate the various pathology in different organ systems in order to provide cause of death					✓
CO9: Awareness of the newer advances in pathology and their applications in relation to important diseases		✓	✓	✓	

Table 724: Mapping between COs of MBPH and POs

MBPH: Pharmacology					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Competency to use essential medicines in the daily practice of the medical graduate			✓	✓	
CO2: Competency to select drugs for common disease conditions based on objective criteria, individualize the selected drug for a particular patient and write a correct prescription			✓	✓	
CO3: Competency to respond effectively to pharmaceutical promotion and the ability to use various independent sources of medicine information in the process of prescribing and providing treatment				✓	
CO4: Competency to use drugs, especially antimicrobials rationally		✓	✓	✓	
CO5: Competency to analyse prescribing in primary health facilities using WHO prescribing indicators and be able to use the same for self-analysis and improvement of own prescribing behaviour	✓	✓	✓		✓
CO6: Competency to communicate drug and non-drug information about common diseases with a simulated patient	✓		✓		
CO7: Competency to report adverse drug reactions to the pharmacovigilance centre		✓			✓
CO8: Competency to diagnose and manage over dosage			✓		

Table 725: Mapping between COs of MBMI and POs

MBMI: Microbiology					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Knowledge of the natural history of infectious disease in order to deal with etiology, pathogenesis, laboratory diagnosis, treatment and control of infections in the community	✓	✓	✓	✓	✓
CO2: Competency to demonstrate the various methods of sterilization practiced in the microbiology laboratory		✓		✓	✓
CO3: Competency to interpret the various antigen antibody reactions and to identify various hypersensitivity reactions				✓	

Table 726: Mapping between COs of MBFM and POs

MBFM: Forensic Medicine					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Competency to conduct a medico-legal autopsy, prepare an autopsy report and give evidence in a court of law				✓	✓
CO2: Competency to collect, preserve and dispatch material objects and samples from the dead body as a part of autopsy examination				✓	
CO3: Competency to identify the cases where police intimation is required and medico legal reports are to be prepared and handle such situations with necessary communication skills				✓	✓
CO4: Competency to examine an injured or intoxicated individual, prepare a report and give evidence in a court of law. Competency in identifying and managing child abuse cases	✓	✓	✓	✓	✓
CO5: Competency to examine the victim and accused in an alleged sexual assault case, prepare a report and give evidence in a court of law			✓	✓	✓
CO6: Competency to identify the scenarios where material objects are to be collected, preserved and dispatched from a living person				✓	
CO7: Competency to manage the medico-legal aspects of poisoning. Ability to give medico-legal consultation			✓	✓	
CO8: Competency to practice the profession in accordance with principles of bioethics and attitude to handle professional secrets in an ethical and legally compatible manner					✓
CO9: Ability to mould the practice so as to minimize and resolve legal conflicts arising in the doctor patient relationship					✓



Table 727: Mapping between COs of MBCM and POs

MBCM: Community Medicine					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: To understand the concept of health and epidemiology of a disease in general as well as with special focus to communicable and non communicable diseases	✓	✓	✓	✓	
CO2: Ability to understand the three tier health system according to Indian Public Health Standards and to develop skill to deliver health services at both urban and rural setting using community participation and health education	✓	✓	✓	✓	✓
CO3: To collect, compile, analyze and interpret health related data for disease surveillance using epidemiological and biostatistical principles	✓		✓	✓	
CO4: To make clear understanding about importance of nutrition and environment on health	✓	✓	✓	✓	
CO5: To understand the objectives of various national health programmes as well as be able to implement, monitor and evaluate them	✓	✓	✓	✓	✓

Table 728: Mapping between COs of MBOP and POs

MBOP: Ophthalmology					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Knowledge and skills to practice as a clinical and as a primary eye care physician	✓		✓		
CO2: Ability to function effectively as a community health leader to assist in the implementation of National programme for the prevention of blindness and rehabilitation of the visually impaired		✓		✓	
CO3: Competency to elicit a history pertinent to general health and ocular status		✓	✓		✓
CO4: Competency to diagnose and treat common problems affecting the eye	✓			✓	✓

Table 729: Mapping between COs of MBEN and POs

MBEN: E.N.T					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Competency to perform complete ear nose, throat examination	✓		✓		
CO2: Knowledge of the pathophysiology of common ENT diseases and emergencies		✓		✓	
CO3: Competency to prescribe common investigative procedures, including imaging, and interpret the findings		✓	✓		✓
CO4: Competency to counsel the patient regarding need for various common surgeries in ENT				✓	✓
CO5: Competency to perform ENT emergencies procedures with assistance	✓	✓			
CO6: Competency to prescribe appropriate and rational medicines for common ENT conditions	✓			✓	✓

Table 730: Mapping between COs of MBIM and POs

MBIM: General Medicine					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Understand the basic of Anatomy and Physiological and biochemical changes occur in the human body	✓		✓		
CO2: Develop clinical skills to diagnose various common medical disorders and emergencies with empathy and sympathy			✓	✓	✓
CO3: Able to outline various modes of management including drug therapeutics especially dosage, side effects, toxicity, interactions, indications and contra-indications		✓		✓	
CO4: Able to assist the common bedside investigative procedures like pleural tap, lumbar puncture, bone marrow aspiration/biopsy and liver biopsy and can perform simple routine investigations	✓	✓		✓	
CO5: Use of invasive and non invasive investigations required for the diagnosis and ability to interpret them			✓	✓	✓

Table 731: Mapping between COs of MBSU and POs

MBSU: Surgery					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Competency to diagnose common surgical conditions both acute and chronic, in adult and children	✓				✓
CO2: Competency to plan various laboratory tests for surgical conditions and interpret the results		✓	✓	✓	
CO3: Ability to identify and manage patients of different types of shock and degrees of burn		✓	✓		✓
CO4: Ability to maintain patent air-way and resuscitate i. a critically injured patient; ii. Patient with cardio-respiratory failure; and iii. Drowning case				✓	✓
CO5: Knowledge of principles of operative surgery, including pre-operative, operative and post operative care and monitoring	✓	✓			
CO6: Competency to treat injuries, surgical emergencies and provide sound primary care before referring the patient to secondary/tertiary centers	✓			✓	✓

Table 732: Mapping between COs of MBPE and POs

MBPE: Paediatrics					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Competency to assess the growth and sexual maturity of a child including adolescent			✓	✓	✓
CO2: Competency to prescribe and administer immunization		✓	✓	✓	
CO3: Competency to manage malnutrition		✓	✓	✓	✓
CO4: Competency to manage anaphylaxis			✓	✓	
CO5: Competency to manage a child with disability		✓	✓	✓	✓
CO6: Competency to manage meningeal irritation			✓	✓	
CO7: Competency to manage seizure in a child			✓	✓	
CO8: Competency to diagnose and manage dehydration			✓	✓	
CO9: Competency to manage aspiration and perform Heimlich manoeuvre			✓	✓	
CO10: Competency to accompany as a member of the transport team	✓			✓	✓
CO11: Competency to communicate with the relatives with empathy and sympathy	✓		✓	✓	✓
CO12: Competency to give chest compression in case of bradycardia			✓	✓	

Table 733: Mapping between COs of MBOG and POs

MBOG: Obstetrics and Gynaecology					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Competency to examine a pregnant woman; recognize high risk pregnancies and make appropriate referrals	✓	✓	✓	✓	✓
CO2: The ability to optimally manage common conditions affecting the female reproductive system	✓		✓	✓	
CO3: Competency to conduct a normal delivery, recognize complication and provide postnatal care		✓		✓	
CO4: Competency to resuscitate the new born and recognize congenital anomalies			✓	✓	
CO5: Competency to advise a couple on the use of various available contraceptive devices and assist in insertion and removal of intra-uterine contraceptive devices	✓	✓	✓	✓	✓
CO6: Competency to perform pelvic examination, diagnose and manage common gynaecological problems including early detection of genital malignancies			✓	✓	
CO7: Competency to interpret results of investigations like biochemical, histopathological, radiological, ultrasound etc			✓	✓	

Table 734: Mapping between COs of MBRD and POs

MBRD: Radiodiagnosis					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Understanding of the basics of x-ray production, its uses and hazards. Ability to use basic protective techniques during various imaging procedures	✓	✓			
CO2: Ability to acknowledge and diagnose changes in bones – like fractures, infections, tumors and various metabolic bone diseases		✓	✓	✓	
CO3: Competency to identify and diagnose various radiological changes in disease conditions of skeletal system, chest and mediastinum, hepatobiliary system, gastro intestinal tract, and genito urinary (G.U) system			✓	✓	
CO4: Able to interpret common x-ray, radio diagnostic techniques in various community situations	✓			✓	✓
CO5: Competency to advise appropriate diagnostic procedures in specialized circumstances to appropriate specialists		✓		✓	
CO6: Knowledge of various imaging techniques, including isotopes Computerized Tomography (C.T), Ultrasound, Magnetic Resonance Imaging (M.R.I) and Digital subtraction angiography (D.S.A)			✓	✓	

Table 735: Mapping between COs of MBPS and POs

MBPS: Psychiatry					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Ability to be the first contact physician for the mentally ill.	✓		✓	✓	✓
CO2: Awareness about and affinity for a holistic humanistic approach and a bio-psycho-social model of clinical medicine.	✓	✓	✓	✓	✓
CO3: To understand about mind and its disorders.	✓		✓	✓	
CO4: Competency to take appropriate referral decisions in psychiatric, neuropsychiatric and psychosomatic disorders.	✓		✓	✓	✓
CO5: To be able to communicate with patients to help them in adjusting illness and accepting treatment.	✓	✓	✓	✓	✓

Table 736: Mapping between COs of MBDR and POs

MBDR: Dermatology					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Ability to diagnose and manage common skin disorders.			✓	✓	
CO2: Competency to correlate skin lesions with possible underlying systemic conditions.		✓		✓	✓
CO3: Competency to interview the patient, elicit relevant and correct information and describe the history in chronological order.			✓	✓	
CO4: Knowledge of the basics of topical drugs therapy.		✓	✓		
CO5: Competency to diagnose sexually transmitted diseases and leprosy and be aware of various National Programs in leprosy and STDs.	✓	✓			✓
CO6: Ability to recognize emergency situation and refer to a specialist for further evaluation.	✓				✓
CO7: Knowledge of the nuances of cosmetic dermatology and dermatological surgery.				✓	
CO8: Competency to perform simple, routine investigative and laboratory procedures required for making the bed-side diagnosis especially the examination of scrapings for fungus, preparation of slit smears and staining for AFB for leprosy patients and for STD cases.		✓	✓		

Table 737: Mapping between COs of MBOR and POs

MBOR: Orthopaedics					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Competency to detect sprains and deliver first aid measures for common fractures and sprains and manage uncomplicated fractures of clavicle, Colle's fracture, phalanx fracture, undisplaced fractures, forearm, Jone's fracture.	✓		✓		
CO2: Competency to diagnose and manage common bone infections.	✓		✓		
CO3: Competency to give advice aspects of rehabilitation for polio, cerebral palsy and amputation.	✓	✓			✓
CO4: Orientation in basic principles of community-based rehabilitation of people with disabilities.		✓		✓	

Table 738: Mapping between COs of MBAS and POs

MBAS: Anaesthesia					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Knowledge of the various types of anaesthesia and have the skill to prevent as well as deal with their complications.	✓		✓	✓	✓
CO2: Knowledge of the basic components of critical care as well as prolonged life support.	✓		✓	✓	✓
CO3: Understanding of management of acute and chronic pains with understanding of the components of the WHO 3 step analgesic ladder.	✓	✓	✓	✓	✓
CO4: Understanding of palliative care, supportive care and long term care.	✓	✓	✓	✓	✓
CO5: Knowledge of the principles of management of the dying patient.	✓		✓	✓	✓

Table 739: Mapping between COs of MBCT and POs

MBCT: Pulmonary Medicine					
Course Outcome	PO1	PO2	PO3	PO4	PO5
CO1: Competency to prepare the clinical history of a patient with respiratory illness, by interacting with the patient, stressing on the points of presenting illness, past illness, personal history, occupational history etc.	✓			✓	✓
CO2: Develop the skill to clinically examine a patient with respiratory illness by methods of Inspection, palpation, percussion and auscultation.	✓			✓	✓
CO3: Ability to take history, make diagnosis and suggest investigations and treatment in a patient with pleural effusion, pneumonic consolidation, pneumothorax, COPD, Bronchial asthma	✓	✓	✓	✓	✓
CO4: Understand how to take history and do clinical examination in a patient with Tuberculosis (pulmonary & extra pulmonary) and plan investigations and treatment with emphasis on Revised National TB control Program.	✓	✓	✓	✓	✓
CO5: To be able to conceptualise the diagnosis, management and prevention of the spread of an infectious respiratory illness like influenza or influenza like illness .	✓	✓	✓	✓	✓

## 8.9.2 MD Anatomy

The following PSOs are defined for the said Program

PSO1: Specialist who can provide comprehensive care related to anaesthesiology, critical care and pain management.

- PSO2: Leader and team member who understands health care system and act to provide safe patient care with accountability and responsibility.
- PSO3: Emphasis on attitude, behaviour, safety, communication, presentation, audit, teaching, law and management.
- PSO4: Develop scientific temper, acquire educational experience for expertise in profession and promote healthy living.
- PSO5: Lifelong learner keen on updating oneself regarding the advancement in the health care field and able to perform the role of researcher and teacher.
- PSO6: Become an exceptional citizen by observation of medical ethics and fulfilling social and professional obligations , according to the national aspirations.

Table 740: Course Outcome of MDAN1

MDAN1: Gross Anatomy	
Course Outcome	Students will be able to
CO1	Gross anatomy of entire body
CO2	Procurement and embalming technique
CO3	Preparation of specimen for museum

Table 741: Mapping between COs of MDAN1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓		✓					✓		✓		✓	✓			✓		
CO2	✓			✓	✓													
CO3					✓				✓					✓				✓

Table 742: Course Outcome of MDAN2

MDAN2: Embryology, Microscopic Anatomy and Genetics	
Course Outcome	Students will be able to
CO1	Knowledge about general and systemic embryology
CO2	Principles of microscopy e.g light microscopy, transmission microscopy, electron microscopy and fluorescent microscopy
CO3	Cellular organisation of tissues
CO4	Study of genes, principles of genetics, reproduction genetics, chromosomal aberrations



Table 743: Mapping between COs of MDAN2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1					✓		✓		✓	✓	✓	✓			✓		✓	
CO2	✓	✓			✓	✓			✓	✓			✓	✓			✓	
CO3	✓	✓	✓					✓					✓		✓	✓		
CO4	✓	✓							✓	✓	✓		✓		✓			✓

Table 744: Course Outcome of MDAN3

MDAN3: Neuroanatomy	
Course Outcome	Students will be able to
CO1	Detailed structure of Central nervous system and its applied aspect

Table 745: Mapping between COs of MDAN3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓			✓			✓					✓		✓			✓	

Table 746: Course Outcome of MDAN4

MDAN4: Applied Human Anatomy and recent advances in anatomical Sciences	
Course Outcome	Students will be able to
CO1	Clinical correlation of structure and function of human body
CO2	Recent advances in medical sciences which facilitate comprehension of structural and functional correlation & its application in clinical problem solving

Table 747: Mapping between COs of MDAN4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓		✓				✓		✓				✓			✓		
CO2		✓		✓		✓								✓			✓	

### 8.9.3 MD Physiology

The following PSOs are defined for the said Program

- PSO1: Able to demonstrate comprehensive understanding of physiology as well as applied disciplines.
- PSO2: Acquire the competence pertaining to basic instrumentation and procedures pertaining to physiology that are required to be practiced in community and at all levels of health care system.
- PSO3: Acquire skills effectively in interpreting all laboratory reports.
- PSO4: Competence to perform relevant investigations which will help to diagnose important medical conditions.
- PSO5: Acquired skills effectively in communicating the diagnosis to the patients and families.
- PSO6: Able to demonstrate empathy and have a human approach towards patients & respect their sensibilities.
- PSO7: Oriented to the principles of research methodology.
- PSO8: Acquired skills in educating medical & paramedical professionals and able to organize and equip Physiology Lab.
- PSO9: Should be able to record, interpret & demonstrate ECG, EEG & Spirometry .
- PSO10: Should be able to interpret, and explain Amphibian skeletal muscle & cardiac muscle graphs

Table 748: Course Outcome of MDPHY1

MDPHY1: General Physiology	
Course Outcome	Students will be able to
CO1	Discuss history of Physiology and describe the various cellular and genetic control mechanism of cell, Describe the mechanism of Growth, development and ageing
CO2	Describe bio-electrical potential, haemo-dynamics and body fluid compartments
CO3	Describe the principles of Biostatistics, Biochemistry, Micro-anatomy

Table 749: Mapping between COs of MDPHY1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	
CO1	✓								✓					✓					✓				
CO2	✓								✓		✓	✓		✓					✓				
CO3	✓		✓											✓									

Table 750: Course Outcome of MDPHY2

MDPHY2: Systemic Physiology (system providing transport, nutrition and energy)	
Course Outcome	Students will be able to
CO1	Describe the composition and function of blood and details of immunity
CO2	Describe the properties of cardiac muscle, cardiac cycle, CO and ECG, Describe the mechanism and regulation of respiration, Transport of gases
CO3	Describe the function, digestion and absorption in GIT, function of bile and pancreatic enzyme

Table 751: Mapping between COs of MDPHY2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1		✓		✓	✓	✓	✓	✓		✓			✓		✓	✓	✓		✓		✓	
CO2					✓				✓						✓	✓	✓					
CO3					✓						✓				✓						✓	✓

Table 752: Course Outcome of MDPHY3

MDPHY3: Systemic Physiology (system concerned with regulation, neural control and procreation)	
Course Outcome	Students will be able to
CO1	Describe classification of Nerve, types muscle, NM junction and mechanism of muscle contraction, Describe the receptors, Ascending and descending pathways, function of subcortical structures, cerebellum and spinal cord
CO2	Describe the secretion, function & regulation of various hormones
CO3	Describe spermatogenesis, oogenesis, ovulation, menstrual cycle and contraceptive

Table 753: Mapping between COs of MDPHY3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1					✓	✓									✓	✓	✓					
CO2					✓	✓												✓		✓	✓	✓
CO3	✓										✓										✓	✓

Table 754: Course Outcome of MDPHY4

MDPHY4: Applied Physiology including and advances	
Course Outcome	Students will be able to
CO1	Describe pathophysiology of various systemic diseases, and various clinical investigations
CO2	Describe various effects of high altitude, space and deep sea on human body
CO3	Describe the effects of exercise, yoga and meditation on human body

Table 755: Mapping between COs of MDPHY4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	
CO1							✓		✓						✓		✓	✓	✓				
CO2		✓	✓	✓				✓								✓		✓					
CO3									✓		✓	✓			✓				✓		✓		✓

#### 8.9.4 MD BIOCHEMISTRY

The following PSOs are defined for the said Program

- PSO1: To demonstrate comprehensive understanding of Biochemistry as well as applied disciplines.
- PSO2: To acquire the competence pertaining to basic instrumentation and procedures pertaining to Biochemistry that is required to be practiced in community and at all levels of health care system.
- PSO3: To acquire skills effectively in interpreting all laboratory reports.
- PSO4: To achieve competence to perform relevant investigations that will help to diagnose important medical conditions.
- PSO5: To acquire skills to effectively communicate the diagnosis to the patients and families.
- PSO6: To be able to demonstrate empathy and have a human approach towards patients & respect their sensibilities.
- PSO7: To be duly oriented to the principles of research methodology and biostatistics.
- PSO8: To acquire skills in educating medical and paramedical professionals and able to organize and equip a standard Biochemistry Lab.

MDBI1: Biomolecules, cell biology, biochemical techniques, biostatistics and research methodology, basics of medical education in teaching and assessment of biochemistry

Table 756: Course Outcome of MDBI1

MDBI1	
Course Outcome	Students will be able to
CO1	Understand the intricacies of molecular organization of cell, cell transport, sorting of protein, Extracellular matrix and their research implications and be able to conduct molecular level experiments study the pathogenesis of diseases and drug action
CO2	Learn the know how of research methodology, analyse data and art of publishing
CO3	To become adept in teaching and evaluation methods in Medical Biochemistry with clinical correlation

Table 757: Mapping between COs of MDBI1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓	✓		✓						✓	✓		✓	✓	✓	✓			✓	✓
CO2	✓	✓		✓	✓	✓	✓		✓	✓			✓	✓		✓			✓	✓
CO3	✓	✓							✓	✓	✓	✓	✓	✓	✓		✓		✓	✓

MDBI2: Enzymes, bioenergetics, biological oxidation, metabolism of biomolecules, intermediary metabolism and regulation, inborn errors of metabolism and nutrition

Table 758: Course Outcome of MDBI2

MDBI2	
Course Outcome	Students will be able to
CO1	To understand the metabolic processes in the body and their implications in health and disease
CO2	To learn about the principles of Food and Nutrition and their applied aspect in health and diseases
CO3	To learn estimation of different parameters to evaluate metabolic disorders
CO4	To formulate diet charts for healthy and diseased individuals

Table 759: Mapping between COs of MDBI2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓		✓									✓	✓		✓	✓	✓	✓		
CO2	✓	✓									✓	✓	✓	✓	✓					✓
CO3	✓	✓	✓	✓	✓		✓				✓	✓	✓	✓	✓	✓	✓			✓
CO4	✓	✓		✓				✓			✓	✓	✓							✓

MDBI3: Molecular biology, molecular and genetic aspects of cancer, immunology and effects of environmental pollutants on the body

Table 760: Course Outcome of MDBI3

MDBI3	
Course Outcome	Students will be able to
CO1	To learn the Molecular processes of central dogma and their applied aspect pertaining to drug action and diseases
CO2	To learn cancer biology, pathogenesis and treatment based on the basic knowledge of molecular biology
CO3	To learn principles of Immunology, its involvement in diseases and treatment modalities
CO4	To learn about environmental factors associated with disease and xenobiotics metabolism
CO5	Study of glycomics, proteomics and genomics to understand their implication in diagnosis and treatment

Table 761: Mapping between COs of MDBI3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓		✓	✓							✓		✓	✓	✓	✓			✓	✓
CO2	✓	✓	✓	✓							✓		✓	✓	✓	✓			✓	✓
CO3	✓		✓	✓							✓		✓	✓	✓	✓				✓
CO4	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓
CO5	✓	✓									✓		✓	✓						✓

MDBI4: Clinical biochemistry and molecular diagnostics related to different body systems/organs, endocrinology, and recent advances in biochemistry

Table 762: Course Outcome of MDBI4

MDBI4	
Course Outcome	Students will be able to
CO1	To learn the role of Biochemistry in clinical diagnosis and different techniques of assay in biochemical and molecular parameters
CO2	To learn the association of endocrinal system in metabolic diseases
CO3	To be aware of recent advancements in the field of Molecular research, Clinical Biochemistry, biostatistics and pedagogy

Table 763: Mapping between COs of MDBI4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓	✓	✓	✓	✓	✓					✓		✓	✓	✓	✓	✓			
CO2	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓

### 8.9.5 MD PATHOLOGY

The following PSOs are defined for the said Program

- PSO1: Capability of offering a high-quality diagnostic opinion in a given clinical situation with an appropriate and relevant sample of tissue, blood, body fluid, etc for the purpose of diagnosis and overall wellbeing of the ill.
- PSO2: Interpret and correlate clinical and laboratory data so that clinical manifestations of diseases can be explained.
- PSO3: Advise on the appropriate specimens and tests necessary to arrive at a diagnosis in a problematic case.
- PSO4: Able to collect specimens by routinely performing non-invasive out-patient procedures such as venepuncture, finger-prick, fine needle aspiration of superficial lumps and bone-marrow aspirates, and provide appropriate help to colleagues performing an invasive procedure such as a biopsy or an imaging guided biopsy.
- PSO5: Perform an autopsy, dissect various organ complexes, and display the gross findings.
- PSO6: Develop communication skills to word reports and professional opinion as well as to interact with patients, relatives, peers, and paramedical staff, and for effective teaching.

PSO7: Identify problems in the laboratory, offer solutions thereof and maintain a high order of quality control and ensure safe and effective disposal of laboratory waste.

PSO8: Plan, execute, analyse, and present research work.

Table 764: Course Outcome of MDPA1

MDPA1:General Pathology, Pathophysiology, Immunopathology and Cytopathology	
Course Outcome	Students will be able to
CO1	The student should be able to demonstrate an understanding of the histogenetic and patho-physiologic processes associated with various lesions
CO2	Independently be able to perform fine needle aspiration of all lumps in patients; make good quality smears, and be able to decide on the types of staining in a given case
CO3	Should possess the background necessary for the evaluation and reporting of cytopathology specimens
CO4	Demonstrate familiarity with the scope, principles, limitations and interpretations of the results of the procedures employed in ELISA techniques, Radioimmunoassay and HLA typing and also interpret simple immunological tests used in diagnosis of diseases

Table 765: Mapping between COs of MDPA1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓	✓							✓											
CO2		✓			✓		✓	✓			✓		✓			✓			✓	
CO3			✓						✓				✓	✓	✓			✓		
CO4					✓						✓		✓						✓	



Table 766: Course Outcome of MDPA2

MDPA2: Systemic pathology	
Course Outcome	Students will be able to
CO1	Given the clinical and operative data, the student should be able to identify, and systematically and accurately describe the chief gross anatomic alterations in the surgically removed specimens and be able to correctly diagnose at least 80% of the lesions received on an average day from the surgical service
CO2	Be conversant with automatic tissue processing machine and the principles of its running and process a tissue, make a paraffin block and cut sections of good quality on a rotary microtome
CO3	Stain paraffin sections with at least Haematoxylin and eosin stain, Stains for collagen, elastic fibres and reticulin, Iron stain, PAS stain and Acid fast stain

Table 767: Mapping between COs of MDPA2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1			✓		✓		✓	✓					✓	✓	✓	✓	✓			
CO2						✓					✓								✓	
CO3											✓								✓	

Table 768: Course Outcome of MDPA3

MDPA3: Haematology, Transfusion Medicine (Blood Banking) and Laboratory Medicine	
Course Outcome	Students will be able to
CO1	Describe accurately the morphologic findings in the peripheral and bone marrow smears, identifying and quantitating the morphologic abnormalities in disease states and arriving at a correct diagnosis in at least 90% of the cases referred to the Haematology clinic, given the relevant clinical data
CO2	Plan a strategy of laboratory investigation of a given case, given the relevant clinical history and physical findings in a logical sequence, with a rational explanation of each step and be able to correctly interpret the laboratory data of such studies, and discuss their significance with a view to arrive at a diagnosis
CO3	Correctly and independently perform selection and bleeding of donors, Preparation of blood components, ABO and Rh grouping. And demonstrate familiarity with Antenatal and Neonatal work up
CO4	Should be familiar with the function, handling and routine care of equipments in the laboratory

Table 769: Mapping between COs of MDPA3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1			✓		✓								✓			✓				
CO2		✓	✓		✓	✓							✓	✓	✓					
CO3				✓	✓		✓	✓			✓	✓			✓	✓				
CO4				✓		✓													✓	

Table 770: Course Outcome of MDPA4

MDPA4: Recent Advances and Applied Aspects	
Course Outcome	Students will be able to
CO1	Demonstrate familiarity with the principles and exact procedures of various immunohistochemical stains employing monoclonal and polyclonal antibodies and be aware of the limitations of immuno-histochemistry
CO2	Should understand the principles of molecular biology especially related to the understanding of disease processes and its use in various diagnostic tests
CO3	Should be conversant with the principle and steps and interpretation of Polymerase Chain Reaction (PCR), Western Blot, Southern Blot, Northern Blot and Hybridisation procedures
CO4	Plan and execute research work on the unexplored and recent concepts in the field of Pathology

Table 771: Mapping between COs of MDPA4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1											✓		✓	✓	✓			✓		
CO2	✓								✓											
CO3					✓							✓	✓					✓	✓	
CO4										✓										✓

### 8.9.6 MD MICROBIOLOGY

The following PSOs are defined for the said Program

PSO1: Demonstrate competence as a clinical microbiologist

PSO2: Interact effectively with the allied departments by rendering services in basic as well as advanced laboratory investigations

PSO3: Demonstrate application of microbiology in a variety of clinical settings to solve diagnostic and therapeutic problems along with preventive measures.

PSO4: Play a pivotal role in hospital infection control, including formulation of antibiotic policy and management of biomedical waste.

PSO5: Acquire skills in conducting collaborative research in the field of Microbiology and allied sciences.

PSO6: Conduct such clinical/experimental research as would have significant bearing on human health and patient care.

PSO7: Demonstrate effective communication skills required for the practice of clinical microbiology and while teaching undergraduate students.

PSO8: Establish good clinical microbiological services in a hospital and in the community in the fields of bacteriology, virology, parasitology, immunology, and mycology.

PSO9: Plan, execute and evaluate teaching assignments in Medical Microbiology.

PSO10: Plan, execute, analyse, and present the research work in medical microbiology.

Table 772: Course Outcome of MDMI1

MDMI1:General Microbiology and Immunology	
Course Outcome	Students will be able to
CO1	Important historical events and developments in microbiology
CO2	Various bio-safety issues including physical and biological containment, universal containment, personal protective equipment for biological agents
CO3	Immunological techniques and their applications in diagnostic microbiology as well as research
CO4	Mechanisms and significance of immune-potentiation and immune-modulation

Table 773: Mapping between COs of MDMI1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10		
CO1	✓						✓		✓					✓			✓		✓				✓	
CO2	✓								✓		✓	✓		✓	✓				✓					
CO3	✓		✓			✓					✓			✓				✓				✓		
CO4		✓			✓		✓		✓			✓			✓					✓			✓	

Table 774: Course Outcome of MDMI2

MDMI2: Systematic Bacteriology	
Course Outcome	Students will be able to
CO1	Demonstrate knowledge and skills in various techniques for isolation and identification of bacteria
CO2	Demonstrate knowledge about epidemiology, morphology, biochemical properties, antigenic nature, pathogenesis, complications, laboratory diagnosis, treatment and prevention of major bacterial pathogens of medical importance
CO3	Explain general characteristics including morphology, reproduction and classification of fungi
CO4	Demonstrate knowledge and skills for isolation and identification of fungi

Table 775: Mapping between COs of MDMI2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1		✓		✓	✓	✓	✓	✓		✓			✓			✓	✓		✓		✓	
CO2					✓				✓					✓	✓		✓					
CO3					✓						✓				✓						✓	✓
CO4			✓			✓				✓		✓	✓					✓		✓		

Table 776: Course Outcome of MDMI3

MDMI3: Virology Parasitology and Mycology	
Course Outcome	Students will be able to
CO1	Demonstrates knowledge about general properties, classification, morphology, virus replication and genetics of viruses
CO2	Explain pathogenesis of viral infections
CO3	Demonstrate knowledge about general characters, classification and methods of identification of parasites
CO4	Demonstrate knowledge about epidemiology, morphology, antigenic nature, lifecycle, pathogenesis, complications, laboratory diagnosis, treatment and prevention of parasites of medical importance

Table 777: Mapping between COs of MDMI3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1		✓			✓	✓			✓						✓	✓	✓					
CO2					✓	✓				✓			✓					✓		✓	✓	✓
CO3	✓						✓	✓			✓										✓	✓
CO4			✓	✓		✓						✓		✓		✓			✓			

Table 778: Course Outcome of MDMI4

MDMI4: Applied Microbiology and Recent Advances	
Course Outcome	Students will be able to
CO1	Demonstrate knowledge about antimicrobial prophylaxis and therapy
CO2	Demonstrate knowledge about hospital acquired infections
CO3	Demonstrate knowledge about management of biomedical waste
CO4	Effectively investigate an infectious outbreak in hospital and community

Table 779: Mapping between COs of MDMI4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1							✓		✓						✓		✓	✓	✓			
CO2		✓	✓	✓				✓						✓		✓		✓				
CO3						✓			✓		✓	✓			✓				✓		✓	✓
CO4	✓				✓			✓		✓			✓			✓				✓		

### 8.9.7 MD PHARMACOLOGY

The following PSOs are defined for the said Program

PSO1: Acquire sound knowledge of general pharmacological principles, systemic pharmacology and rational use of drugs.

PSO2: Plan and conduct lecture, practical demonstration, and tutorial classes for students of medical and allied disciplines.

PSO3: Carry out screening of drugs for pharmacological and toxicological profile.

PSO4: Critically review and comment on research papers.

PSO5: Monitor adverse drug reactions, therapeutic drug monitoring, and able to provide drug information service to needy places.

PSO6: Preparation of protocols to conduct experimental studies in animals and human drug trials independently.

PSO7: Impart adequate knowledge on Therapeutic audit: Drug utilisation studies, essential drug concept, rational prescribing.

PSO8: Apply the concepts related to research methodology and medical biostatistics in future research projects.

Table 780: Course Outcome of MDPH1

MDPH1: General Pharmacology	
Course Outcome	Students will be able to
CO1	Describe the Pharmacokinetic principles and parameters, Factors modifying drug action, Pharmacogenetics, Chrono pharmacology, Adverse effects of drugs, Drug dependence
CO2	Describe Basics of principles of diagnosis and treatment of human poisoning. Clinical features of common poisoning. Antidotes in the management of poisoning
CO3	Describe Gene expression, Pharmacogenomics, Proteomics, techniques involved in studying receptor dynamics. PCR, Northern blot, Southern blot and Western blot. Protein purification. Mono & polyclonal antibodies
CO4	Basic constituents of plants (chemical classification). Isolation of active constituent from plant materials. Percolation and maceration

Table 781: Mapping between COs of MDPH1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1		✓	✓			✓					✓		✓				✓			✓
CO2				✓	✓	✓		✓		✓			✓							✓
CO3							✓		✓		✓		✓							✓
CO4	✓	✓									✓		✓	✓					✓	

Table 782: Course Outcome of MDPH2

MDPH2: Clinical Pharmacology	
Course Outcome	Students will be able to
CO1	Action of different drugs on Autonomic nervous system, Central nervous system
CO2	Description of different Autacoids, Drugs affecting kidney function and cardiovascular system
CO3	Drugs affecting gastrointestinal and respiratory system
CO4	Adequate knowledge about Chemotherapy of microbial diseases and parasite infections as well as Antineoplastic agents
CO5	Therapeutics of Immunomodulators, Drugs acting on blood and blood forming organs including different Hormones

Table 783: Mapping between COs of MDPH2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1		✓	✓			✓					✓	✓			✓		✓			
CO2				✓	✓	✓		✓		✓			✓			✓		✓		
CO3							✓		✓		✓						✓			✓
CO4			✓	✓	✓	✓						✓	✓	✓	✓	✓	✓			
CO5		✓	✓											✓	✓					✓

Table 784: Course Outcome of MDPH3

MDPH3: Systemic Pharmacology	
Course Outcome	Students will be able to
CO1	Experimental methodologies involved in the discovery of drugs (in vivo, in vitro, ex vivo)
CO2	Methods of anaesthetising animals and methods of euthanasia
CO3	Calculation of basic statistical parameters (mean, median, mode, standard deviation, standard error etc.). Null hypothesis, parametric and non parametric tests
CO4	Basis and working principle of colorimeter, ultraviolet, atomic absorption spectrometers, Fluorescence spectroscopy, NMR and Mass Spectroscopy, Basics of Chromatography

Table 785: Mapping between COs of MDPH3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1			✓			✓					✓	✓			✓		✓	✓		
CO2										✓	✓									
CO3							✓		✓		✓						✓		✓	
CO4	✓									✓	✓		✓	✓						✓

Table 786: Course Outcome of MDPH4

MDPH4: Recent Advances in Pharmacology	
Course Outcome	Students will be able to
CO1	Basics of pharmacokinetics, calculation of pharmacokinetic estimates (C-max, Tmax, T1/2, AUC(0-n), AUC(0- $\infty$ ), Vd, Ke, Ka etc.
CO2	Drugs and Cosmetics Act, Drug Price Control order, Application for Investigational New Drug (IND), Application for New Drug Discovery (NDD)
CO3	Types of clinical trials, clinical trial for a new investigational drug in India
CO4	Basic principles of TDM, Therapeutic audit, Drug delivery systems, Pharmacovigilance, Pharmacoeconomics, Pharmacogenetics and Drug Information

Table 787: Mapping between COs of MDPH4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1		✓	✓			✓					✓	✓			✓		✓			
CO2				✓	✓	✓		✓		✓			✓		✓		✓			
CO3							✓		✓		✓						✓			✓
CO4	✓		✓					✓			✓		✓	✓			✓		✓	

### 8.9.8 MD FORENSIC MEDICINE

The following PSOs are defined for the said Program

- PSO1: Perform medico-legal autopsy independently, prepare report and derive inferences.
- PSO2: Interpret histopathological, microbiological, radiological, toxicological and DNA analysis and other investigative reports for medico-legal purposes.
- PSO3: Assist and advise police in the examination of crime scenes, collection of trace evidence and scientific methods of criminal investigation.
- PSO4: Appear as an expert witness in a Court of Law on medicolegal matters and tender evidence.
- PSO5: Describe relevant legal/court procedures applicable to medicolegal/medical practice.
- PSO6: Identify, examine and prepare reports in Clinical Forensic Medicine.
- PSO7: Plan, organize and supervise medicolegal work in general/teaching hospitals.
- PSO8: Interpret and advise authorities on matters related to Medical Ethics and the Law.
- PSO9: Discharge duties in respect of clinical, emergency, environmental, medico-legal and occupational aspects of Toxicology.
- PSO10: Provide information and consultation on all aspects of toxicology to professionals, industry, Government and public at large.



Table 788: Course Outcome of MDFM1

MDFM1: Basic of Forensic Medicine, basic sciences and allied subjects	
Course Outcome	Students will be able to
CO1	Knowledge of the functional anatomy, physiology and pathology of vital organs and systems
CO2	Proficiency in histopathological techniques and interpretation of histopathological slides
CO3	Knowledge of the basics of microbiology and biochemistry

Table 789: Mapping between COs of MDFM1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	
CO1	✓								✓					✓						✓			
CO2	✓								✓		✓	✓		✓						✓			
CO3	✓		✓											✓									

Table 790: Course Outcome of MDFM2

MDFM2: Clinical Forensic Medicine and medical jurisprudence	
Course Outcome	Students will be able to
CO1	Competency to conduct medicolegal autopsy of adult and fetus, examine skeletal remains and furnish report on the same
CO2	Competency to provide expert opinions from interpretation of reports and evidence from crime scene examinations and material object examination
CO3	Knowledge of techniques for preservation of biological samples and embalming

Table 791: Mapping between COs of MDFM2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1		✓		✓	✓	✓	✓	✓		✓			✓		✓	✓	✓		✓		✓	
CO2					✓				✓						✓	✓	✓					
CO3					✓						✓				✓						✓	✓

Table 792: Course Outcome of MDFM3

MDFM3: Forensic Pathology and Toxicology	
Course Outcome	Students will be able to
CO1	Knowledge of court procedures and the ability to provide evidence as an expert witness. Knowledge of the procedure for recording dying declaration
CO2	Ability to furnish reports with scientific opinions based on examination of the injured, the intoxicated and the victim or the accused in medicolegal cases
CO3	Knowledge in management and medico-legal aspects of poisoning. Basic knowledge of analytical toxicology

Table 793: Mapping between COs of MDFM3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1					✓	✓									✓	✓	✓					
CO2					✓	✓												✓		✓	✓	✓
CO3	✓										✓										✓	✓

MDFM4: Recent advances in Forensic Medicine, Forensic Psychiatry and Medical Toxicology, applied aspects of clinical disciplines and forensic sciences

Table 794: Course Outcome of MDFM4

MDFM4	
Course Outcome	Students will be able to
CO1	Awareness of DNA analysis and collection and dispatch of trace evidences. Knowledge of scientific and investigative techniques and its principles
CO2	Ability in diagnosis of mental illness and medico-legal aspects of the same. Knowledge of various mental health acts. Proficiency with the provisions on the civil and criminal responsibility of the mentally ill
CO3	Awareness recent advances in Forensic Medicine, Forensic Science and allied subjects

Table 795: Mapping between COs of MDFM4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1							✓		✓						✓		✓	✓	✓			
CO2		✓	✓	✓				✓								✓		✓				
CO3									✓		✓	✓			✓				✓		✓	✓

## 8.9.9 MD COMMUNITY MEDICINE

The following PSOs are defined for the said Program

- PSO1: Cognitive, psychomotor and behavioral competencies required for a public health professional having expertise in applied epidemiology, planning and management to formulate National Health Policies & programmes for overall development of the community.
- PSO2: Expertise in taking clinical history, physical examination, making provisional diagnosis using laboratory investigation, formulating preventive and management plans for the patients as well as community.
- PSO3: Proficiency for data collection, analysis and interpretation of results and its application in form of research for betterment of community
- PSO4: Ability to investigate and control epidemics, pandemics.
- PSO5: Assess the needs of the community and identify their problems through communication and conduct Health Education Programmes using appropriate IEC materials and BCC to improve knowledge and attitude of the community.
- PSO6: Adequate knowledge about the importance and role of professionalism, ethics and lifelong learning and good clinical practice in order to conduct clinical trials for development of vaccines, drugs, technology to benefit the humanity.

MDCM1: Conceptual (and applied) understanding of Public Health, Community Medicine, Communicable and Non-Communicable diseases, emerging and re-emerging diseases, Applied Epidemiology, Health research, Bio-statistics

Table 796: Course Outcome of MDCM1

MDCM1	
Course Outcome	Students will be able to
CO1	Explain the concept and application of public health approach such as health promotion, prevention and control of disease
CO2	To understand various aspects of epidemiology of a disease such as distribution and determinants of disease, uses, types of study design, validity of epidemiological Data and its application of this knowledge at field level
CO3	Understand and explain epidemiology, prevention and management of Communicable/Non-communicable diseases
CO4	Explain research methods, Research related protocols, Literature review, estimating sample size, data collection/ compilation/Analysis/ Research, interpretation

Table 797: Mapping between COs of MDCM1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	
CO2	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓		✓	✓		✓
CO3	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓			✓	
CO4	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓

MDCM2: Nutrition, Environmental Health, Primary Health Care system, Panchayat Raj System, National health Programs, RCH, Demography and Family Welfare, Health Care Administration, Health Management and Public Health Leadership

Table 798: Course Outcome of MDCM2

MDCM2	
Course Outcome	Students will be able to
CO1	Identify various nutritional problems in the region, state and country, assess nutritional status of a community and plan balanced diet and dietary requirements
CO2	Highlight importance of environment and its impact on ecology and human health
CO3	Explain the scope and implications of 3-tier system of Primary Health Care; promote community participation in Primary Health Care programme
CO4	Apply skills of effective human resource management, undertake community health needs survey to assess needs of community, conduct training, identify vulnerable, underprivileged communities and implement high risk approach

Table 799: Mapping between COs of MDCM2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓		✓	✓
CO2	✓		✓	✓	✓	✓			✓	✓	✓	✓	✓		✓		✓	✓
CO3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
CO4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

MDCM3: Social and Behavioural sciences- applied aspects, Scientific communications and Medical writing, Research Methodology, Public Health Legislations, International Health and Global Diseases surveillance

Table 800: Course Outcome of MDCM3

MDCM3	
Course Outcome	Students will be able to
CO1	Understand influence of social and behavioural practices on health and importance of behaviour change communication (BCC)
CO2	Explain public health legislations, enforcement of various public health laws
CO3	Understand the need and scope for international health measures
CO4	Promote global health surveillance

Table 801: Mapping between COs of MDCM3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2	✓			✓	✓	✓	✓	✓	✓		✓	✓	✓			✓	✓	✓
CO3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
CO4	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		

MDCM4: Health Policy planning, Medical Education technology, Information Technology, Integration of alternative Health system including AYUSH, Occupational Health, Recent advances in Public Health and Miscellaneous issues, Health Economics

Table 802: Course Outcome of MDCM4

MDCM4	
Course Outcome	Students will be able to
CO1	Explain the provision of policy with reference to the current health scenario in the country for promotion of preventive and curative health services including National Health Mission, National Health Programs, Quality Hospital based services, Medical Education and AYUSH
CO2	Understand the concept of occupational health and its importance
CO3	Identify and enlist events at local, district, national and global levels influencing or adversely affecting health and medical issues of the population

Table 803: Mapping between COs of MDCM4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

### 8.9.10 MD GENERAL MEDICINE

The following PSOs are defined for the said Program

- PSO1: Competency development & upgradation in managing critical cases.
- PSO2: Oriented to the principles of research & its importance in health care.
- PSO3: Emphasis on attitude, behaviour, safety, communication, presentation, audit, teaching, and management.
- PSO4: Develop scientific temper, acquire educational experience for expertise in profession and promote healthy living.
- PSO5: Knowledge of basic sciences and recent advances as applicable to Medical science.
- PSO6: Providing high quality health care and advancing the cause of science through research and training.
- PSO7: Become an exceptional citizen by observation of medical ethics and fulfilling social and professional obligations, according to the national aspirations.
- PSO8: Acquired skills in educating medical & paramedical professionals and ability to organize to achieve defined goals.

Table 804: Course Outcome of MDIM1

MDIM1: Basic Medical Sciences	
Course Outcome	Students will be able to
CO1	Taught about basics of human anatomy relevant to clinical practice and taught about the applied aspect
CO2	Taught about the basic functioning (physiology) and biochemical aspect of various organ systems and informed about how to apply it in future practice
CO3	Patho-physiological alteration in diseased states and changes in various organs associated with disease and their co-relation with clinical signs and symptoms
CO4	Taught about the pharmacokinetics and pharmacodynamics of different drugs used while treatment and informed about their judicious use in future
CO5	Given knowledge regarding various micro-organisms and various poisons with respect to their geographical presence, so that they will be able to diagnose cases in an efficient way in the future

Table 805: Mapping between COs of MDIM1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓												✓							
CO2	✓	✓		✓				✓					✓		✓	✓	✓	✓		
CO3	✓		✓		✓				✓		✓		✓		✓	✓	✓	✓		
CO4	✓	✓	✓	✓		✓			✓	✓	✓	✓	✓						✓	
CO5		✓		✓			✓	✓		✓			✓	✓		✓				

Table 806: Course Outcome of MDIM2

MDIM2: Medicine and allied specialties including pediatrics, dermatology and psychiatry	
Course Outcome	Students will be able to
CO1	Taught about the different symptoms, morphological appearance and associated systemic conditions of dermatological diseases so that they can diagnose and treat dermatological cases and know about the dermatological manifestation of systemic diseases
CO2	Since mental health problems are very much prevalent and under diagnosed, they are informed about various manifestations of psychiatric diseases, which will help them to manage these cases appropriately. They are also taught about the different psychiatric manifestations of systemic diseases and how to rule out them
CO3	Preventive and environmental issues, environmental medicine and bioterrorism, all these things are taught, so that they can tell the patients about preventive aspects of different systemic diseases
CO4	Taught about biology, epidemiology, neuro-psychiatric aspects of aging, so that they will diagnose and manage geriatric diseases

Table 807: Mapping between COs of MDIM2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓		✓		✓	✓	✓	✓			✓	✓	✓		✓	✓	✓	✓		
CO2	✓	✓		✓					✓						✓	✓	✓	✓		
CO3	✓													✓					✓	✓
CO4	✓	✓	✓	✓		✓			✓	✓	✓	✓	✓				✓	✓		

Table 808: Course Outcome of MDIM3

MDIM3: Tropical Medicine and Infectious Diseases	
Course Outcome	Students will be able to
CO1	The students are given learning regarding the approach to the patient with possible cardiovascular diseases, their signs and symptoms, so that they can manage these cases
CO2	Taught about the approach to the patient with respiratory disease and their manifestation and management which will help them in future in their clinical application
CO3	Taught about the approach to different patient with GI diseases, hematological diseases and their applied aspects so that they can diagnose and treat these cases efficiently
CO4	Taught about clinical features and approach to nephrology, endocrinology, neurology and oncology & by virtue of which they can treat these cases efficiently

Table 809: Mapping between COs of MDIM3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO2	✓												✓		✓	✓	✓			
CO3	✓												✓		✓	✓	✓	✓		
CO4	✓	✓	✓	✓		✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 810: Course Outcome of MDIM4

MDIM4:Recent Advances in Medicine	
Course Outcome	Students will be able to
CO1	Overview of the paradigm of genetic contribution to health and diseases so that they can know about genetic component of different diseases and investigations, which then will help them in proper diagnosis and management
CO2	Innate and adaptive immune system and mechanism of immune mediated cell injury are explained to them, so that they know about immunological aspects of different diseases
CO3	They are also informed about different diagnostic procedures, so that they are kept updated about the recent diagnostic procedure, which will help them in future in diagnosing and managing patient
CO4	They are trained to do different procedures to diagnose and manage the cases, so that in future that will help them



Table 811: Mapping between COs of MDIM4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓					✓	✓		✓	✓	✓	✓	✓	✓	✓	✓			✓	
CO2	✓												✓		✓		✓		✓	
CO3	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓			✓	✓
CO4	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓				✓	✓		✓

### 8.9.11 MD PAEDIATRICS

The following PSOs are defined for the said Program

PSO1: Providing high quality health care and advancing the cause of science through research and training.

PSO2: Competency development & upgradation in managing Pediatric critical cases.

PSO3: Emphasis on attitude, behaviors, safety, communication, presentation, audit, teaching, and management.

PSO4: Develop scientific temper, acquire educational experience for expertise in profession and promote healthy living.

PSO5: Knowledge of basic sciences and recent advances as applicable to Pediatric & New Born Health.

PSO6: Become an exceptional citizen by observation of medical ethics and fulfilling social and professional obligations, according to the national aspirations.

PSO7: Oriented to the principles of research & its importance in health care.

PSO8: Acquired skills in educating medical & paramedical professionals and ability to organize to achieve defined goals.

Table 812: Course Outcome of MDPE1

MDPE1: Basic Sciences as Applied to Paediatrics	
Course Outcome	Students will be able to
CO1	Principles of inheritance, embryogenesis of different organ systems especially heart, genitourinary system, gastro-intestinal tract. Applied anatomy and functions of different organ systems
CO2	Placental physiology, fetal and neonatal circulation, regulation of temperature, blood pressure, acid base balance, fluid electrolyte balance and calcium metabolism
CO3	Growth and development at different ages, growth charts; puberty and its regulation. Vitamins and their functions. Hematopoiesis, hemostasis, bilirubin metabolism. Nutrition: requirements and sources of various nutrients
CO4	Knowledge of pharmacokinetics of common drugs, antimicrobial agents, antiepileptics drugs etc. Learning basic research methodology, biostatistics, epidemiology, ethical and medico-legal issues

Table 813: Mapping between COs of MDPE1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓		✓								✓		✓	✓				✓		
CO2		✓					✓		✓		✓		✓		✓		✓	✓		✓
CO3			✓	✓	✓	✓				✓					✓	✓		✓		✓
CO4	✓	✓		✓		✓		✓		✓		✓	✓						✓	

Table 814: Course Outcome of MDPE2

MDPE2: Neonatology and Community Paediatrics	
Course Outcome	Students will be able to
CO1	Perinatal care, low birth weight, care in the labor room and resuscitation, newborn feeding, Jaundice, gastrointestinal disorders, neurologic disorders, malformations, renal disorders
CO2	Thermoregulation, prematurity and respiratory distress, common transient phenomena, apnea, infections, anemia and bleeding disorders
CO3	Principles of prevention, control of infections, vaccines: constituents, efficacy, storage, contraindications and adverse reactions, rationale and methodology of pulse polio immunization, Investigation of an epidemic
CO4	National health programs related to child health, IMNCI, National policy of child health and population, Juvenile delinquency, child labor, abuse, neglect adoption, disability and rehabilitation, rights of the child

Table 815: Mapping between COs of MDPE2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓		✓		✓	✓	✓						✓		✓	✓	✓	✓		✓
CO2		✓					✓	✓	✓			✓		✓	✓	✓	✓			
CO3			✓	✓		✓				✓	✓			✓					✓	✓
CO4	✓				✓			✓	✓			✓	✓		✓		✓	✓		

Table 816: Course Outcome of MDPE3

MDPE3:General Paediatrics including advances in Paediatrics relating to Cluster I specialties	
Course Outcome	Students will be able to
CO1	Nutritional disorders; nutrition for the low birth weight, breast feeding, protein energy malnutrition, obesity, parenteral and enteral nutrition. Infections, bacterial (including tuberculosis), viral (including HIV), fungal, parasitic, rickettsia, mycoplasma, protozoal and parasitic, nosocomial infections
CO2	Recent advances in emergency and Critical Care procedures. Developing appropriate skill in managing critical cases. Management of poisoning, scorpion and snake bites. Immunology and Rheumatology, arthritis, vasculitis's, immunodeficiency syndromes, systemic lupus erythematosus
CO3	Current concepts in management of behavioral and developmental disorders (rumination, pica enuresis, encopresis, sleep disorders, habit disorders, breath holding spells, anxiety disorders, mood disorders, temper tantrums, attention deficit hyperactivity disorders, autism
CO4	Ability to diagnose and manage common ENT, skin diseases, eye diseases and ability to identify problems for appropriate timely referral

Table 817: Mapping between COs of MDPE3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓		✓		✓	✓	✓					✓	✓	✓		✓	✓	✓	✓	
CO2		✓					✓	✓	✓				✓		✓	✓	✓			
CO3		✓	✓		✓	✓		✓	✓	✓	✓			✓		✓	✓			
CO4	✓					✓		✓	✓			✓	✓	✓			✓	✓		✓

Table 818: Course Outcome of MDPE4

MDPE4:Paediatric Medicine including advances in Paediatrics relating to Cluster II specialties	
Course Outcome	Students will be able to
CO1	Ability to diagnose and treat cardiovascular conditions (congenital heart diseases, rheumatic (RHD), infective endocarditis, arrhythmia, disease of myocardium, diseases of pericardium, systemic hypertension, hyperlipidemia in children
CO2	Respiratory (congenital and acquired disorders, infections, foreign body in larynx trachea and bronchial asthma, bronchiolitis, acute pneumonia, bronchiolitis, atelectasis lung cysts, mediastinal mass, pleural effusion
CO3	Gastrointestinal and liver diseases, congenital pyloric stenosis, acute and chronic pancreatic disorders, malabsorption syndrome, acute and chronic diarrhea. Nephrologic and Urologic disorders, urinary tract infection. Posterior urethral valves, undescended testis, hernia, hydrocele, Wilms tumor
CO4	Neurologic disorders (meningitis, encephalitis cerebral palsy, epilepsy, GBS) Hematology (iron deficiency anemia, hemolytic) and Oncology, Endocrinology (Diabetes, hypo/hyper thyroidism, CAH, short stature, pubertal disorders)

Table 819: Mapping between COs of MDPE4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓		✓		✓	✓	✓				✓		✓	✓	✓	✓		✓	✓	
CO2		✓				✓		✓	✓			✓			✓		✓		✓	
CO3	✓		✓	✓		✓	✓			✓	✓		✓	✓		✓			✓	✓
CO4								✓	✓			✓	✓				✓	✓		✓

### 8.9.12 MD DVL

The following PSOs are defined for the said Program

PSO1: Knowledge of the basic sciences as applied to dermatology.

PSO2: Acquire in depth knowledge about the bedside procedures, recent therapeutic, diagnostic approach.

PSO3: Competence to evaluate , initiate investigation and clinically manage dermatological cases and emergencies.

PSO4: Orientation for community practice, measures for prevention and rehabilitation in communicable diseases like Hansen’s disease and fungal infections.

PSO5: Able to implement the national health policies in sexually transmitted diseases, Leprosy and HIV.

PSO6: Knowledge about the basic concepts of research methodology, planning research projects and publishing articles.

PSO7: Attitude and communication skills to practice ethically and holistically in the specialty of dermatology.

PSO8: Acquiring skills for dermatosurgery, cosmetics ,lasers and implementing in practice.

Table 820: Course Outcome of MDDR1

MDDR1:Basic Science as Applied to Dermatology, STDs and Leprosy	
Course Outcome	Students will be able to
CO1	Describe the aspects of aepidermis, epidermal appendages, dermoepidemal junction dermis and S.C tissue
CO2	Describe pathologic patterns and skin reactions
CO3	Demonstration of lab procedures and immunofluorescence

Table 821: Mapping between COs of MDDR1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓							✓	✓		✓		✓	✓				✓	✓	
CO2		✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	
CO3			✓		✓		✓			✓	✓	✓	✓			✓	✓			✓

Table 822: Course Outcome of MDDR2

MDDR2: Dermatology	
Course Outcome	Students will be able to
CO1	Describe the various infectious diseases of the skin
CO2	Describe psoriasis, bullous disorders, malignant skin disorder and autoimmune diseases
CO3	Describe inborn errors of metabolism, nutritional dermatoses
CO4	Approach to clinic etiological factors and management of urticaria and mastocytosis

Table 823: Mapping between COs of MDDR2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1		✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	
CO2	✓	✓	✓	✓	✓	✓	✓			✓	✓		✓	✓	✓			✓	✓	✓
CO3		✓	✓				✓				✓	✓		✓	✓	✓	✓	✓	✓	✓
CO4	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓				✓	✓	✓	✓	✓	✓

Table 824: Course Outcome of MDDR3

MDDR3: STD and Leprosy	
Course Outcome	Students will be able to
CO1	Describe the male and female genitalia
CO2	Describe clinical aspects and management of STD's
CO3	Staging, clinical features and management of HIV
CO4	Express the clinical features, reactions, rehabilitation and treatment in leprosy

Table 825: Mapping between COs of MDDR3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓	✓		✓	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2	✓	✓	✓		✓		✓	✓	✓	✓				✓	✓		✓	✓	✓	
CO3	✓			✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO4	✓	✓	✓		✓	✓	✓	✓		✓	✓			✓	✓	✓	✓		✓	

MDDR4: Recent advances in field of Dermatology, Applied Sciences Pertaining to skin /VD and Internal Medicine and Skin

Table 826: Course Outcome of MDDR4

MDDR4	
Course Outcome	Students will be able to
CO1	Knowledge about dermatological manifestation and related complications in COVID 19 Era
CO2	Acquiring skills about vitiligo surgery, Acne Surgery, Excisional procedure, Biopsy techniques, Cryo therapy
CO3	Describe the skin resurfacing techniques using chemical peels, Dermabrasion, PRP
CO4	Expertise in basic lasers, fractional CO2 laser, Ndyag laser, Diode laser

Table 827: Mapping between COs of MDDR4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓		✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2		✓	✓		✓	✓	✓		✓	✓			✓		✓			✓	✓	✓
CO3	✓		✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓				✓	✓
CO4	✓	✓		✓	✓	✓			✓	✓			✓	✓				✓	✓	✓

### 8.9.13 MD PULMONARY MEDICINE

The following PSOs are defined for the said Program

- PSO1: Competency development & upgradation in managing critical cases.
- PSO2: Oriented to the principles of research & its importance in health care.
- PSO3: Emphasis on attitude, behavior, safety, communication, presentation, audit, teaching, and management.
- PSO4: Develop scientific temper, acquire educational experience for expertise in profession and promote healthy living.
- PSO5: Knowledge of basic sciences and recent advances as applicable to Medical science
- PSO6: Providing high quality health care and advancing the cause of science through research and training.
- PSO7: Become an exceptional citizen by observation of medical ethics and fulfilling social and professional obligations, according to the national aspirations
- PSO8: Acquired skills in educating medical & paramedical professionals and ability to organize to achieve defined goals.

Table 828: Course Outcome of MDCT1

MDCT1: General Pulmonary Medicine and Basic Sciences	
Course Outcome	Students will be able to
CO1	Taught about basics of human anatomy relevant to pulmonary medicine clinical practice and taught about the applied aspect
CO2	Taught about the basic functioning (physiology) and biochemical aspect of respiratory systems and informed about how to apply it in future practice
CO3	Pathophysiological alteration in respiratory disease states and changes in various organs associated with disease and their co-relation with clinical signs and symptoms
CO4	Taught about the pharmacokinetics and pharmacodynamics of different drugs used while treatment and informed about their judicious use in future
CO5	Adequate knowledge regarding various micro-organisms, poisons, noxious particles in the environment causing respiratory ailments, required procedures and how to perform them

Table 829: Mapping between COs of MDCT1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓												✓							
CO2	✓	✓		✓				✓					✓		✓	✓	✓	✓		✓
CO3	✓		✓		✓				✓		✓		✓		✓	✓	✓	✓		✓
CO4	✓	✓	✓	✓		✓			✓	✓	✓	✓	✓						✓	
CO5		✓		✓			✓	✓		✓										✓

Table 830: Course Outcome of MDCT2

MDCT2: Clinical Pulmonary Medicine including Medical Emergencies	
Course Outcome	Students will be able to
CO1	Taught about the different definitions, risk factors, etiology, pathology, pathogenesis, clinical features, specific tests, diagnostic modalities, protocols, managements of pulmonary as well as extra pulmonary tuberculosis and other respiratory infections with management of complications
CO2	In high prevalent country where tuberculosis and infection is high should know about NTEP based hierarchy system
CO3	Must know about GOI guidelines regarding Tuberculosis
CO4	Up to date knowledge regarding drug resistant tuberculosis



Table 831: Mapping between COs of MDCT2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓		✓		✓	✓	✓	✓			✓	✓	✓		✓	✓	✓	✓		
CO2	✓	✓		✓					✓						✓	✓	✓	✓		
CO3	✓													✓					✓	✓
CO4	✓	✓	✓	✓		✓			✓	✓	✓	✓	✓				✓	✓		

Table 832: Course Outcome of MDCT3

MDCT3: Clinical Pulmonary Medicine including Critical Care Medicine	
Course Outcome	Students will be able to
CO1	The students are given learning regarding the approach to the patient with possible obstructive respiratory diseases considering asthma, COPD, bronchiectasis, CF etc., their signs and symptoms, so that they can manage these cases
CO2	Taught about the approach to the patient with chest wall and mediastinal diseases and their manifestation and management which will help them in future in their clinical application
CO3	Taught about the approach to different patient with pulmonary vascular and interstitial, immunological diseases, their applied aspects so that they can diagnose and treat these cases efficiently
CO4	Taught about clinical features and approach to pleural diseases, drug induced lung diseases, pulmonary oncology, occupational lung diseases, sleep related diseases and by virtue of which they can treat these cases efficiently

Table 833: Mapping between COs of MDCT3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓	✓	✓	✓		
CO2	✓														✓	✓	✓	✓		
CO3	✓													✓					✓	✓
CO4	✓	✓	✓	✓		✓			✓	✓	✓	✓	✓				✓	✓		

Table 834: Course Outcome of MDCT4

MDCT4: Recent Advances in Pulmonary Medicine, and Research Methodology	
Course Outcome	Students will be able to
CO1	Should have ideas regarding progress in research in regarding to respiratory field
CO2	Statistical procedures which will help them in research process
CO3	They are also informed about different advanced diagnostic procedures, so that they are kept updated about the recent diagnostic procedure, which will help them in future in diagnosing and managing patient
CO4	They are trained to manage different critically ill patients, to diagnose and manage the cases, so that in future that will help them

Table 835: Mapping between COs of MDCT4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓					✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO2	✓												✓		✓	✓	✓			
CO3	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓		
CO4	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓

#### 8.9.14 MS SURGERY

The following PSOs are defined for the said Program

- PSO1: Diagnose and appropriately manage common surgical ailments in a given situation.
- PSO2: Provide adequate preoperative, post-operative and follow-up care of surgical patients.
- PSO3: Identify situations calling for urgent or early surgical intervention and refer at the optimum time to the appropriate centers.
- PSO4: Counsel and guide patients and relatives regarding need, implications and problems of surgery in the individual patient.
- PSO5: Provide and coordinate emergency resuscitative measures in acute surgical situations including trauma.
- PSO6: Organize and conduct relief measures in situations of mass disaster including triage.

PSO7: Perform surgical audit on a regular basis and maintain records (manual and/or electronic) for life.

PSO8: Discharge effectively medico-legal and ethical responsibilities and practice his specialty ethically.

PSO9: Must update knowledge in recent advances and newer techniques in the management of the patients.

PSO10: Effectively participate in the National Health Programs especially in the Family Welfare Programs.

Table 836: Course Outcome of MSSU1

MSSU1: Basic Sciences	
Course Outcome	Students will be able to
CO1	Describe Basic concepts of homeostasis, enumerate the metabolic changes in injury and their mediators
CO2	Describe the factors that affect the metabolic response to injury
CO3	Describe basic concepts of perioperative care

Table 837: Mapping between COs of MSSU1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	
CO1	✓								✓					✓						✓			
CO2	✓								✓		✓	✓		✓						✓			
CO3	✓		✓											✓									

Table 838: Course Outcome of MSSU2

MSSU2: Principles and Practice of Surgery	
Course Outcome	Students will be able to
CO1	Describe the principles of ethics as it pertains to General Surgery
CO2	Demonstrate professionalism and empathy to the patient undergoing General surgery
CO3	Discuss Medico-legal issues in surgical practice

Table 839: Mapping between COs of MSSU2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1		✓		✓	✓	✓	✓	✓		✓			✓		✓	✓	✓		✓		✓	
CO2					✓				✓						✓	✓	✓					
CO3					✓					✓				✓							✓	✓

Table 840: Course Outcome of MSSU3

MSSU3: Principles and Practice of Operative Surgery	
Course Outcome	Students will be able to
CO1	Describe the principles of perioperative management of common surgical procedure
CO2	Describe the steps and obtain informed consent in a simulated environment
CO3	Observe common surgical procedures and assist in minor surgical procedure, Observe emergency lifesaving surgical procedures

Table 841: Mapping between COs of MSSU3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1					✓	✓									✓	✓	✓					
CO2					✓	✓												✓		✓	✓	✓
CO3	✓										✓										✓	✓

Table 842: Course Outcome of MSSU4

MSSU4:Recent Advances in Surgery	
Course Outcome	Students will be able to
CO1	Describe the immunological basis of organ transplantation
CO2	Discuss the Principles of immunosuppressive therapy. Enumerate, Indications, describe surgical principles, management of organ transplantation
CO3	Discuss the legal and ethical issues concerning organ donation

Table 843: Mapping between COs of MSSU4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1							✓		✓						✓		✓	✓	✓			
CO2		✓	✓	✓				✓								✓		✓				
CO3									✓		✓	✓			✓				✓		✓	✓

### 8.9.15 MS ORTHOPAEDICS

The following PSOs are defined for the said Program

PSO1: Ability to apply to knowledge of orthopedics in patient management in OPD, IPD and OT.

- PSO2: To develop the knowledge in the various fields of orthopedics and in recent advances.
- PSO3: To develop team work and learn from seniors and faculty, for the group learning.
- PSO4: To groom the future post-graduates in the same department in the development of their knowledge in orthopedics.
- PSO5: Acquired skills effectively in communicating the diagnosis to the patients and families.
- PSO6: To have experience in the management of indoor patients and outdoor patients and identify emergency situation to be handled in casualty.
- PSO7: Oriented to the principles of research methodology in the practical scene
- PSO8: To understand the medicolegal aspect of orthopedic surgery and the consent patterns for the patients in all variety of cases.
- PSO9: To acquire thorough knowledge of the instrumentation used in the orthopedic surgery and the various implants used and their cost in relation to the surgery before planning.
- PSO10: To explore learning the various fields of the department like arthroplasty, arthroscopy, spine, deformity correction, pediatric orthopedics, hand surgery, etc.

Table 844: Course Outcome of MSOR1

MSOR1: Basic Sciences as Applied to Orthopaedics	
Course Outcome	Students will be able to
CO1	Knowledge of the functional anatomy, physiology and pathology of bones and Skeletal System and other organ systems
CO2	In patient management and getting ideas on various splintage traction and how to read a radiograph and implement in opd and emergency
CO3	Knowledge of the basics fractures and there management

Table 845: Mapping between COs of MSOR1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	✓								✓					✓					✓			
CO2	✓								✓		✓	✓		✓					✓			
CO3	✓		✓											✓								

Table 846: Course Outcome of MSOR2

MSOR2:Traumatology and Rehabilitation	
Course Outcome	Students will be able to
CO1	Able to assist in the Operation theatre and manage OPD with Guidance
CO2	Able to identify Fractures and cold orthopedic case like Infection, Tumors, Tuberculosis
CO3	Able to manage a fresh fracture, with Splintage, Slab, Casts

Table 847: Mapping between COs of MSOR2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1		✓		✓	✓	✓	✓	✓		✓			✓		✓	✓	✓		✓		✓	
CO2					✓				✓						✓	✓	✓					
CO3					✓						✓				✓						✓	✓

Table 848: Course Outcome of MSOR3

MSOR3: Orthopaedic Diseases	
Course Outcome	Students will be able to
CO1	Able to identify Pediatric Orthopedic complains and and deformities like, Varus, Valgus, and ankylosis
CO2	To develop knowledge in Arthritis of Joints in all forms degenerative, inflammatory, traumatic, infective and tubercular and plan its treatment
CO3	Knowledge in identify Neurological issues and disorder as of in any cases, Spine fractures, Degenerative, Tumors, Congenital Deformity

Table 849: Mapping between COs of MSOR3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1					✓	✓									✓	✓	✓					
CO2					✓	✓												✓		✓	✓	✓
CO3	✓										✓										✓	✓

Table 850: Course Outcome of MSOR4

MSOR4:Recent advances in Orthopaedic surgery + General Surgery as applied to Orthopaedics	
Course Outcome	Students will be able to
CO1	Arthroplasty, Arthroscopy– Able to identify cause, plan OT in case of Joint problems. He must learn the techniques of total Hip Replacement, Total Knee Replacement. He must be able to identify ligament injuries and plan its managements
CO2	He must be able to identify spinal injury levels and identify and plan the treatment of spinal deformity, degenerative, trauma, tumor and infective causes
CO3	Awareness recent advances in field of Orthopaedics like Endoscopy in Spine, Joints, Illizarovs training

Table 851: Mapping between COs of MSOR4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1							✓		✓						✓		✓	✓	✓			
CO2		✓	✓	✓				✓								✓		✓				
CO3									✓		✓	✓			✓				✓		✓	✓

### 8.9.16 MS E.N.T

The following PSOs are defined for the said Program

- PSO1: To create competent E.N.T. specialists with appropriate expertise who would provide high quality healthcare and advance the cause of science through research and training.
- PSO2: Enable to practise the E.N.T. speciality ethically keeping in mind the requirement of the patient, community and people at large.
- PSO3: To plan and advise measures for the promotive, preventive, curative and rehabilitative aspects of health and diseases of the speciality of E.N.T.
- PSO4: To develop interpersonal, interdisciplinary relationship as an efficient team with best communication skills to deal with E.N.T. diseases.
- PSO5: To play the assigned role in the implementation of National Health Policy with reference to E.N.T. and Head & Neck.

Table 852: Course Outcome of MSEN1

MSEN1:Basic Sciences related to Otolaryngology	
Course Outcome	Students will be able to
CO1	Describe the inner ear anatomy with respect to the mechanism of hearing and equilibrium
CO2	Explain the anatomical basis of larynx in voice production
CO3	Identify and elucidate the key anatomical features for deglutition mechanism

Table 853: Mapping between COs of MSEN1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	✓	✓		✓		✓			✓			✓	✓				✓
CO2			✓		✓			✓						✓	✓		
CO3							✓			✓	✓					✓	

Table 854: Course Outcome of MSEN2

MSEN2:Principles and Practices of Otolaryngology	
Course Outcome	Students will be able to
CO1	Enumerate different middle ear pathological conditions contributing to deafness in children
CO2	Describe the clinical presentations of chronic inflammations of paranasal sinuses in different age groups
CO3	Differentiate and evaluate neck masses

Table 855: Mapping between COs of MSEN2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	✓	✓	✓				✓					✓			✓		✓
CO2				✓	✓					✓	✓		✓				
CO3						✓		✓	✓						✓	✓	



Table 856: Course Outcome of MSEN3

MSEN3:Recent Advances in Otolaryngology and Head Neck Surgery	
Course Outcome	Students will be able to
CO1	Apply knowledge of inner ear function in the latest developments in cochlear implant surgery
CO2	Describe different endoscopic approaches for sino nasal surgery
CO3	Evaluate the advantage of laser in phonosurgery

Table 857: Mapping between COs of MSEN3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1		✓		✓		✓		✓				✓			✓		✓
CO2	✓				✓		✓				✓		✓			✓	
CO3			✓						✓	✓				✓			

Table 858: Course Outcome of MSEN4

MSEN4:General Surgical Principles and Head-Neck Surgery	
Course Outcome	Students will be able to
CO1	Evaluate various forms of oral malignancies with their treatment modalities
CO2	Assess radiologically different sino nasal growths with correlation to clinical findings
CO3	Elucidate pathogenesis and pathology of laryngeal malignancies

Table 859: Mapping between COs of MSEN4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	✓	✓	✓	✓								✓			✓		✓
CO2					✓	✓		✓			✓		✓	✓			
CO3							✓		✓	✓						✓	

### 8.9.17 MS OPHTHALMOLOGY

The following PSOs are defined for the said Program

PSO1: Knowledge of the basic sciences as applied to ophthalmology.

PSO2: Acquire in depth knowledge about the bedside procedures, recent therapeutic, diagnostic approach.

PSO3: Competence to evaluate, initiate investigation and clinically manage ophthalmologic cases and emergencies.

PSO4: Orientation for community practice, measures for prevention and rehabilitation in diseases like corneal ulcer.

PSO5: Able to implement the national health policies in preventable causes of blindness, Knowledge about the basic concepts of research methodology, planning research projects and publishing articles.

PSO6: Attitude and communication skills to practice ethically and holistically in the specialty of ophthalmology.

PSO7: Acquiring skills for ophthalmologic surgery, lasers and implementing them in practice.

Table 860: Course Outcome of MSOP1

MSOP1: Basic Sciences Related to Ophthalmology, Refraction and Optics	
Course Outcome	Students will be able to
CO1	Describe visual pathways and associated lesions
CO2	Describe refractive errors of the eye and their treatment
CO3	Describe the pathologic aspects of allergic, infective and tumours of the eye along with the radiologic sign
CO4	Describe the drugs used in ophthalmologic practice

Table 861: Mapping between COs of MSOP1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	✓		✓	✓					✓		✓	✓	✓		✓		✓		
CO2	✓								✓		✓	✓	✓		✓	✓	✓	✓	✓
CO3	✓		✓		✓				✓		✓	✓	✓	✓	✓				
CO4	✓	✓		✓			✓	✓	✓		✓	✓	✓		✓	✓	✓		

Table 862: Course Outcome of MSOP2

MSOP2: Clinical Ophthalmology	
Course Outcome	Students will be able to
CO1	Describe diseases associated with various subspecialties of ophthalmology and their treatment
CO2	Describe manufacturing, indication, and dispensing of contact lenses, low visual aids and ocular prosthesis

Table 863: Mapping between COs of MSOP2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	✓		✓	✓		✓	✓	✓	✓			✓		✓	✓				
CO2	✓	✓		✓				✓	✓		✓	✓							✓

Table 864: Course Outcome of MSOP3

MSOP3: Systemic Diseases in Relation to Ophthalmology	
Course Outcome	Students will be able to
CO1	Describe surgical procedures related to various ophthalmic subspecialties
CO2	Describe the clinical features and management of ophthalmic medical and surgical emergencies
CO3	Elaborate the advanced surgical techniques associated with various ophthalmic subspecialties

Table 865: Mapping between COs of MSOP3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	✓	✓	✓	✓	✓	✓	✓	✓			✓								✓
CO2	✓	✓	✓		✓			✓							✓				
CO3	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓							✓

Table 866: Course Outcome of MSOP4

MSOP4: Recent Advances in Ophthalmology and Community Ophthalmology	
Course Outcome	Students will be able to
CO1	Knowledge about ophthalmic manifestations, complications, management and recent advances in Covid-19 era
CO2	Describe newer drugs used in ophthalmology
CO3	Have knowledge about various equipment used for diagnosis, interpretation and evaluation of diseases related to ophthalmology
CO4	Describe the International and National programmes related to ophthalmology with rehabilitation opportunities of visually handicapped
CO5	Knowledge about research methodology and its application in observation, interpretation and analysis of data

Table 867: Mapping between COs of MSOP4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	✓	✓	✓	✓	✓	✓	✓	✓	✓					✓	✓				
CO2	✓	✓	✓	✓	✓		✓	✓											
CO3	✓	✓	✓	✓	✓		✓	✓	✓					✓					
CO4	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓				✓		✓	
CO5	✓	✓	✓	✓	✓		✓	✓		✓							✓		

### 8.9.18 MD RADIODIAGNOSIS

The following PSOs are defined for the said Program

- PSO1: Acquire the competence pertaining to basic instrumentation and procedures relating to radiology required to be practiced at all health care system levels.
- PSO2: Able to demonstrate radiology and its applications comprehensively.
- PSO3: Acquire skills effectively in interpreting all radiology reports.
- PSO4: Competence to perform relevant investigations which will help to diagnose important medical and surgical conditions.
- PSO5: Acquire skills to effectively communicate the diagnosis to patients & attendant.
- PSO6: Able to demonstrate empathy and have a human approach towards patients & respect their sensibilities.

PSO7: Acquired skills in educating medical & paramedical professionals and able to organize and equip the radiology department.

PSO8: Oriented to the principles of research methodology.

MDRD1: Basic sciences related to Radiology (consists of Anatomy, Pathology, Basic and Radiation Physics, Imaging Techniques, and Film processing)

Table 868: Course Outcome of MDRD1

MDRD1	
Course Outcome	Students will be able to
CO1	Describe radiological anatomy in relation to pathology
CO2	Learn radiology basics and Radiation Physics
CO3	Describe various Imaging Techniques and Film processing

Table 869: Mapping between COs of MDRD1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓					✓			✓					✓			✓		✓	
CO2	✓								✓		✓	✓		✓		✓			✓	
CO3	✓		✓											✓						

MDRD2: Chest, CVS, CNS including Head & Neck, Eye, ENT, musculo-skeletal, paediatric radiology and Mammography.

Table 870: Course Outcome of MDRD2

MDRD2	
Course Outcome	Students will be able to
CO1	Interpretation of chest, CVS, CNS including Head and Neck, Eye and ENT imaging
CO2	Describe musculoskeletal and paediatric radiology
CO3	Perform mammography interpretation

Table 871: Mapping between COs of MDRD2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1		✓		✓	✓	✓	✓	✓		✓			✓		✓	✓	✓		✓	
CO2					✓				✓						✓	✓	✓			
CO3					✓						✓				✓					

MDRD3: Abdominal Imaging including GI, GU, Hepatobiliary, endocrine and metabolic, Obstetrics and Gynaecology and Interventional radiology

Table 872: Course Outcome of MDRD3

MDRD3	
Course Outcome	Students will be able to
CO1	Interpretation of abdominal Imaging including GI, GU and hepatobiliary system imaging
CO2	Describe obstetric Doppler study for improvement of perinatal outcomes
CO3	Perform interventional radiology and image guided biopsy

Table 873: Mapping between COs of MDRD3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1					✓	✓									✓	✓	✓			
CO2					✓	✓												✓		✓
CO3	✓										✓			✓						

MDRD4: Recent advances, nuclear medicine; Radiology related to clinical specialties

Table 874: Course Outcome of MDRD4

MDRD4	
Course Outcome	Students will be able to
CO1	Interpretation of the recent advances in radiology
CO2	Describe the role of Nuclear medicine
CO3	Describe the role Radiology in clinical specialties

Table 875: Mapping between COs of MDRD4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1							✓		✓						✓		✓	✓	✓	
CO2		✓	✓	✓				✓								✓		✓		
CO3									✓		✓	✓	✓		✓				✓	

### 8.9.19 MD O&G

The following PSOs are defined for the said Program

- PSO1: Able to demonstrate comprehensive understanding of Obstetrics & Gynecology as well conditions and related disciplines.
- PSO2: Acquire the competence pertaining to basic instrumentation and procedures in Obstetrics & Gynecology that are required to be practiced in community level and at all levels of health care system.
- PSO3: Acquire skills effectively in interpreting all laboratory reports.
- PSO4: Competence to perform relevant investigations which will help to diagnose important O & G conditions.
- PSO5: Acquired skills effectively in communicating the diagnosis to the patients and families.
- PSO6: Able to demonstrate empathy and have a humane approach towards patients & respect their sensibilities.
- PSO7: Oriented to the principles of research methodology.
- PSO8: Acquired skills in educating medical & paramedical professionals and able to organize community based health care delivery.

Table 876: Course Outcome of MDOG1

MDOG1: Applied Basic Sciences	
Course Outcome	Students will be able to
CO1	Describe Normal and abnormal structure, function and development of human urogenital system and female breast
CO2	Physiological and neuroendocrinal changes during puberty adolescence, reproductive period and menopause
CO3	Biophysical biochemical and immunological changes of pregnancy and childbirth
CO4	Acquire knowledge regarding etio-pathological changes in critically ill patients

Table 877: Mapping between COs of MDOG1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						
CO2	✓								✓	✓	✓		✓			✓	✓		✓	✓
CO3	✓		✓							✓	✓		✓		✓	✓			✓	✓
CO4	✓	✓	✓	✓					✓	✓	✓		✓				✓	✓		

Table 878: Course Outcome of MDOG2

MDOG2:Obstetrics including social obstetrics and Diseases of New Born	
Course Outcome	Students will be able to
CO1	Diagnose and manage all high risk pregnancy cases with emphasis on counselling and proper documentation
CO2	Perform instrumental vaginal deliveries expertly and manage its complications
CO3	Able to perform obstetrical operative procedures with adequate expertise and acquire knowledge for managing complications of the procedure

Table 879: Mapping between COs of MDOG2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓		✓
CO2	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓						✓	✓
CO3	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓

Table 880: Course Outcome of MDOG3

MDOG3: Gynaecology including Fertility Regulation	
Course Outcome	Students will be able to
CO1	Diagnose and manage adequately all adolescent, reproductive and menopausal gynaecological problems
CO2	Adequate knowledge to counsel regarding reproductive health and family planning with special consideration of community need
CO3	Diagnose, manage and counsel cases of gynaecological malignancies with consideration to their reproductive need

Table 881: Mapping between COs of MDOG3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
CO2	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓				✓	✓		✓
CO3	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓



Table 882: Course Outcome of MDOG4

MDOG4: Recent Advances in Obstetrics & Gynaecology	
Course Outcome	Students will be able to
CO1	Knowledge of National health programme and their implementation in relation to O & G
CO2	Proper counselling and management options after sub-fertile couples
CO3	Knowledge of advanced management in Obst. & Gyn. With special emphasis to molecular biology and genetics

Table 883: Mapping between COs of MDOG4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓				✓				✓		✓	✓	✓	✓			✓		✓	✓
CO2	✓	✓			✓		✓	✓	✓	✓	✓		✓	✓				✓	✓	✓
CO3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓		

### 8.9.20 MD PSYCHIATRY

The following PSOs are defined for the said Program

- PSO1: The student should be able to explain etiology, assessment, classification and management and prognosis of various psychiatric disorders (including psychiatric sub-specialities).
- PSO2: Become an expert in good history taking, physical examination, mental state examination, and able to establish rapport and counsel family members and patients on scientific basis.
- PSO3: Arrive at a logical working diagnosis and differential diagnosis after clinical examination.
- PSO4: Order appropriate investigations keeping in mind their relevance and cost effectiveness and obtain additional relevant information from family members to help in diagnosis and management.
- PSO5: Obtain informed consent for any examination/procedure & write a complete case record with all necessary details providing proper discharge summary with all relevant information.
- PSO6: They should acquire knowledge of emergency measures in acute crisis arising out of various psychiatric illnesses & routine bedside diagnostic and acquire knowledge of latest diagnostics and therapeutics procedures available.

PSO7: The student should be conversant with various policy related aspects of Psychiatric practice in India (e.g. Mental Health Act, National Health Mental Health Programmes etc.).

PSO8: The student should be able to explain follow-up care of person suffering from chronic relapsing psychiatric ailments.

PSO9: Must be able to perform modified Electroconvulsive therapy (ECT)

PSO10: The student should be conversant with research methodologies.

Table 884: Course Outcome of MDPS1

MDPS1: Basic Sciences related to Psychiatry	
Course Outcome	Students will be able to
CO1	Knowledge of the functional neuro anatomy, neuro physiology and neuro pathology of human brain
CO2	To understand various aspects of human emotion and behavior
CO3	Knowledge of the basics of neurobiology and neurochemistry, Basic and applied Electrophysiology
CO4	Proficiency in understanding Clinical Psychology related to human behaviour

Table 885: Mapping between COs of MDPS1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	✓			✓					✓					✓			✓		✓			✓
CO2					✓				✓		✓	✓	✓	✓		✓			✓			
CO3	✓		✓			✓		✓						✓						✓		
CO4	✓				✓			✓		✓							✓				✓	

Table 886: Course Outcome of MDPS2

MDPS2: Clinical Psychiatry	
Course Outcome	Students will be able to
CO1	Competency to examine and history taking of Psychiatric patients
CO2	Basic understanding to deal with (aggression violence, uncooperative & suicidal patients) to deal with Psychiatric emergency cases
CO3	Knowledge of techniques about neuro Psychological Assessment
CO4	Competency in managing mood disorder, psychosis & anxiety disorder

Table 887: Mapping between COs of MDPS2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1		✓		✓		✓		✓		✓			✓		✓	✓	✓		✓		✓	
CO2									✓						✓	✓	✓					
CO3	✓				✓		✓				✓				✓						✓	✓
CO4			✓					✓				✓	✓	✓				✓		✓		

Table 888: Course Outcome of MDPS3

MDPS3: Psychiatric Theory and Psychiatric Specialties	
Course Outcome	Students will be able to
CO1	To understand Psychiatric aspects of substance use disorder and its management
CO2	Ability to provide Psychological therapies and Psycho Education
CO3	Knowledge in management and medico-legal aspects of Psychiatric disorder
CO4	Learning about community Psychiatric, Liaison Psychiatry, Women's Mental health

Table 889: Mapping between COs of MDPS3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1		✓				✓			✓			✓			✓	✓	✓					
CO2			✓			✓							✓			✓		✓		✓	✓	✓
CO3	✓						✓		✓		✓				✓						✓	✓
CO4		✓		✓						✓			✓	✓					✓			

Table 890: Course Outcome of MDPS4

MDPS4: Neurology and General Medicine as related to Psychiatry	
Course Outcome	Students will be able to
CO1	To understand basic neurological disorder, i.e. Epilepsy and Psychiatric Syndromes with Epilepsy
CO2	Ability in diagnosis of mental illness related to neurological disorder i.e. various aspects of mood disorder, Parkinsons disorder Dementia, Delirium, Neuro-psychiatric Sequel of HIV Infection
CO3	Awareness recent advances in Psychiatry, Measurement of Quality of Life
CO4	Concept and Assessment of Disability and its benefits

Table 891: Mapping between COs of MDPS4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1		✓					✓		✓		✓				✓		✓	✓	✓			
CO2		✓	✓	✓		✓		✓					✓			✓		✓				
CO3	✓								✓		✓	✓			✓				✓		✓	✓
CO4				✓			✓						✓					✓		✓		

### 8.9.21 MD ANAESTHESIA

The following PSOs are defined for the said Program

PSO1: Specialist who can provide comprehensive care related to anaesthesiology, critical care and pain management.

PSO2: Leader and team member who understands health care system and act to provide safe patient care with accountability and responsibility.

PSO3: Emphasis on attitude, behaviour, safety, communication, presentation, audit, teaching, law and management.

PSO4: Develop scientific temper, acquire educational experience for expertise in profession and promote healthy living.

PSO5: Lifelong learner keen on updating oneself regarding the advancement in the health care field and able to perform the role of researcher and teacher.

PSO6: Become an exceptional citizen by observation of medical ethics and fulfilling social and professional obligations , according to the national aspirations.

Table 892: Course Outcome of MDAS1

MDAS1: Basic Sciences as Applied to Anaesthesiology	
Course Outcome	Students will be able to
CO1	Should gain knowledge of Anatomy, Physiology, Biochemistry, Pharmacology as applied to Anaesthesiology
CO2	Should know Physical principles involved in functioning of anaesthesia equipment including Anaesthesia Machine and monitors
CO3	Should be familiar with the developmental History of anaesthesiology
CO4	Basic Course in Biomedical Research, Data collection and analysis, Scientific Communication

Table 893: Mapping between COs of MDAS1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓		✓				✓					✓		✓		✓		
CO2	✓		✓									✓		✓		✓		
CO3												✓					✓	✓
CO4					✓					✓	✓	✓						✓

Table 894: Course Outcome of MDAS2

MDAS2: Practice of Anaesthesia: Anaesthesia in relation to associated systemic and medical diseases	
Course Outcome	Students will be able to
CO1	Preop Assessment, risk stratification and optimisation
CO2	Plan and conduct surgeries under General anaesthesia
CO3	Plan and conduct surgeries under spinal/Epidural anaesthesia
CO4	Perform and manage peripheral nerve blocks
CO5	Be able to manage postoperative care and discharge from PACU
CO6	Satisfactorily take informed consent and appropriately document
CO7	Anaesthetic management for Emergency cases
CO8	Airway assessment and management
CO9	Performance of peripheral vascular access, central venous access, invasive arterial pressure monitoring
CO10	Anaesthetic management in relation to associated systemic and medical diseases
CO11	Managements of complications during anaesthesia administration
CO12	Anaesthetic Management for broad specialities – General surgery, ENT, OBGYN, Orthopaedics and ophthalmology

Table 895: Mapping between COs of MDAS2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓		✓	✓				✓				✓	✓		✓	✓		
CO2	✓		✓	✓								✓	✓		✓	✓		
CO3	✓		✓	✓								✓	✓			✓		✓
CO4	✓		✓									✓	✓		✓			
CO5			✓	✓								✓			✓	✓		
CO6			✓	✓	✓			✓				✓				✓	✓	
CO7			✓									✓			✓			
CO8			✓									✓			✓			
CO9	✓		✓									✓	✓				✓	✓
CO10	✓		✓									✓	✓		✓			
CO11	✓		✓									✓	✓		✓			
CO12	✓		✓									✓	✓		✓			✓

Table 896: Course Outcome of MDAS3

MDAS3:Anaesthesia in relation to subspecialties/super specialties	
Course Outcome	Students will be able to
CO1	Conduct anaesthesia sedation services outside the OT Radiology, ECT, endoscopy, Bronchoscopy and Colonoscopy, CATHLAB
CO2	Anaesthetic Management for super specialties –CTVS, neurosurgery, urology, plastic surgery. Transplant, Paediatric surgery

Table 897: Mapping between COs of MDAS3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓		✓									✓		✓		✓		
CO2	✓		✓									✓		✓		✓		

Table 898: Course Outcome of MDAS4

MDAS4: Intensive Care Medicine, Pain Medicine and Recent Advances	
Course Outcome	Students will be able to
CO1	Management of critically ill patients
CO2	Management of mechanical ventilation
CO3	Assess and initiate management for acute and chronic pain conditions
CO4	Should be able to perform BLS/ACLS, NAL and ATLS
CO5	Be able exhibit Anaesthesia nontechnical Skills, conduct of audit, OT scheduling and prioritising of cases
CO6	Professionalism, ethics and communication
CO7	Develop ability to search medical literature, perform critical appraisal of literature
CO8	Be familiar with pedagogy and simulation based training

Table 899: Mapping between COs of MDAS4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓		✓									✓	✓		✓			
CO2	✓		✓									✓	✓		✓			
CO3	✓		✓	✓								✓	✓		✓	✓		
CO4	✓		✓									✓	✓		✓			
CO5						✓	✓					✓		✓				✓
CO6						✓			✓		✓	✓		✓				✓
CO7									✓	✓	✓	✓			✓	✓		
CO8											✓	✓		✓		✓		✓

### 8.9.22 MD TRANSFUSION MEDICINE

The following PSOs are defined for the said Program

PSO1: Basic Sciences (Immunology, Medical Genetics, Hemostasis & Physiology of formed elements of blood)

PSO2: Blood Collection/Blood Center/Component Processing.

PSO3: Transfusion transmitted infection.

PSO4: Immunohematology / Blood Group Serology / Compatibility testing.

PSO5: Clinical Transfusion Service.

PSO6: Therapeutic Apheresis, Therapeutic Plasma Exchange and Cytopheresis.

PSO7: Regulatory Skills / Quality Assurance/ Quality Control in blood transfusion.

MDIHBT1: Basic Applied Aspects Related to Transfusion Medicine (including Haematology and Immunology)

Table 900: Course Outcome of MDIHBT1

MDIHBT1)	
Course Outcome	Students will be able to
CO1	Function as a member of the health care team and coordinate with the team in critical situations, like working with surgeons and colleagues in anaesthesia to ensure that optimal care is given to all patients, especially with the support of blood and its products in resuscitation and haemostasis
CO2	Incorporate comprehensive and evidence-based medicine into all areas of its discipline
CO3	Contribute to the education of students, physicians, other health care professionals, and patients and their families
CO4	Communicate effectively with public and media in matters relating to national blood supply
CO5	Learn the diagnostic techniques required in the practice of haematology

Table 901: Mapping between COs of MDIHBT1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1			✓		✓					✓		✓			✓		✓		
CO2				✓		✓	✓	✓	✓	✓	✓		✓			✓			✓
CO3	✓	✓						✓					✓	✓				✓	
CO4	✓	✓		✓			✓					✓		✓		✓			✓
CO5						✓			✓	✓					✓			✓	

MDIHBT2: Immunohematology, immunogenetics, and applied serology( Including Molecular biology and HLA



Table 902: Course Outcome of MDIHBT2

MDIHBT2	
Course Outcome	Students will be able to
CO1	Acquire knowledge in laboratory haematology, automation and quality control and be able to interpret haematological tests in the clinical context and provide consultative services to clinicians for effective patient care
CO2	Acquire up to date knowledge of immunohematology and its application to ensure safe transfusion practices
CO3	Understand the national and public health importance of safe blood components including a sound knowledge in the area of transfusion transmitted Diseases (TTDs) and their testing methods
CO4	Able to offer expert advice in histocompatibility and immunogenetics for stem cell and organ transplantation and to provide laboratory support to transplant team
CO5	Apply knowledge of molecular biology in transfusion medicine

Table 903: Mapping between COs of MDIHBT2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1		✓			✓					✓		✓	✓			✓	✓	✓	
CO2	✓			✓		✓		✓			✓				✓				✓
CO3			✓					✓				✓		✓			✓		
CO4	✓			✓		✓				✓		✓	✓		✓			✓	✓
CO5					✓				✓					✓		✓	✓		✓

Table 904: Course Outcome of MDIHBT3

MDIHBT3: Blood donor organization, Technology of components, clinical hemotherapy	
Course Outcome	Students will be able to
CO1	Organize blood bank activities including blood donations, component separation and storage, appropriate use of blood and blood components
CO2	Understand the importance of blood and blood components as a precious, life saving resource and be competent in the judicious use of this resource
CO3	Understand the need for transfusion safety and its importance in all aspects of medical care
CO4	Act as the medical expert in providing advice and clinical decision making with regard to the need for blood transfusion and work with clinical colleagues in formulating evidence based guidelines
CO5	Apply knowledge of transfusion haematology to patient management

Table 905: Mapping between COs of MDIHBT3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1		✓			✓		✓			✓		✓	✓			✓	✓	✓	
CO2			✓					✓			✓				✓				✓
CO3	✓			✓		✓				✓				✓			✓		
CO4			✓				✓	✓		✓		✓	✓		✓			✓	✓
CO5	✓				✓						✓			✓		✓	✓		✓

Table 906: Course Outcome of MDIHBT4

MDIHBT4: Recent Advances and Technology	
Course Outcome	Students will be able to
CO1	Effectively use information technology for the smooth functioning of blood banks
CO2	Appreciate the value of research, audit and team working, which underpin haematology and transfusion practice
CO3	Understand the need for research and development in transfusion alternatives, molecular immunology and cellular therapy
CO4	Undertake accurate self-appraisal, develop a personal continuing education strategy and pursue lifelong mastery of transfusion haematology

Table 907: Mapping between COs of MDIHBT4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1		✓			✓		✓			✓		✓			✓	✓	✓	✓	✓
CO2			✓					✓			✓		✓	✓		✓		✓	
CO3	✓			✓		✓							✓	✓				✓	
CO4			✓							✓		✓			✓		✓	✓	✓

### 8.9.23 DM CARDIOLOGY

The following PSOs are defined for the said Program

PSO1: To develop a broad knowledge base in the diagnosis and management of common disorders in the fields of Cardiology

PSO2: To develop the requisite skills to analyze and diagnose ECG, Echocardiography, TMT & Holter report to a reasonable degree of proficiency in order to allow the independent and safe practice of clinical cardiology in the future.

PSO3: To develop the requisite skill to perform independently Coronary angiography, Temporary pacemaker insertion, Pericardiocentesis & Catheterisation study. Also to learn to assist in PCI, PPI & PTMC.

PSO4: To practice within the bounds of impeccable ethical standards and provide compassionate care to all patients.

Table 908: Course Outcome of DMCA1

DMCA1: Basic Sciences in Cardiology	
Course Outcome	Students will be able to
CO1	Understanding of basic cardiovascular anatomy and its clinical applications
CO2	Understanding of physiology of cardiac contractility, cardiac conduction system and circulation
CO3	Understanding of neuro-hormonal homeostasis with respect to cardiovascular system
CO4	Understanding of physiology and pathogenesis of diseases related to endomyocardium, myocardium, pericardium and blood vessels

Table 909: Mapping between COs of DMCA1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1		✓											✓			
CO2		✓												✓		
CO3		✓												✓		
CO4		✓													✓	

Table 910: Course Outcome of DMCA2

DMCA2: Clinical Cardiology	
Course Outcome	Students will be able to
CO1	To able to take detailed history, perform full physical examination & make a clinical diagnosis
CO2	To able to plan & deliver comprehensive management of common cardiovascular diseases in consensus with standard guidelines
CO3	To able to plan & advice measures for prevention of cardiovascular diseases
CO4	To able to manage cardiovascular emergencies efficiently

Table 911: Mapping between COs of DMCA2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1				✓	✓									✓		
CO2				✓							✓					✓
CO3	✓				✓	✓							✓			
CO4				✓										✓		

Table 912: Course Outcome of DMCA3

DMCA3: Investigative Cardiology	
Course Outcome	Students will be able to
CO1	Able to analyze and interpret ECG, Holter and pacemaker/ICD/CRTD interrogation
CO2	Able to perform Echocardiography (M-mode, 2Decho, Doppler-color flow imaging, TEE and echo directed hemodynamic studies
CO3	Able to interpret stress studies (TMT, STRESS, Thallium scan, Cardiac CT and MRI, Myocardial perfusion studies
CO4	Experience in cardiac catheterization studies to calculate and interpret various hemodynamic parameters and right and left heart studies

Table 913: Mapping between COs of DMCA3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1		✓											✓	✓		
CO2		✓											✓		✓	✓
CO3		✓												✓		
CO4		✓													✓	

Table 914: Course Outcome of DMCA4

DMCA4: Recent Advances in Cardiology	
Course Outcome	Students will be able to
CO1	To understand and acquire latest updates about clinical trials and guidelines
CO2	To acquire knowledge about novel drugs and therapies in the the field of cardiology
CO3	To keep updates about newer interventional and imaging techniques in the field of cardiology

Table 915: Mapping between COs of DMCA4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1				✓									✓	✓	✓	
CO2				✓										✓	✓	
CO3			✓											✓		✓

### 8.9.24 DM CLINICAL HAEMATOLGY

The following PSOs are defined for the said Program

PSO1: Diagnose and manage all patients with non-malignant and malignant hematological disorders.

PSO2: Perform independently different laboratory hematological investigations used to diagnose hematological disorders.

PSO3: Interpret laboratory data and synthesize laboratory and clinical data so as to provide rational solutions for patients with hematological problems.

PSO4: Supervise the activities of a clinical hematology/laboratory services where ever necessary.

PSO5: To provide the state of art therapy to patients with hematological disorders.

PSO6: To have knowledge and expertise to do BMT.

PSO7: To be able to prepare and perform protocol-based therapies for various oncological and hematological disorders.

Table 916: Course Outcome of DMCH1

DMCH1:Basic Science	
Course Outcome	Students will be able to
CO1	Clear understanding of the basics of hematopoiesis
CO2	Understanding of basics of stem cells and immune system
CO3	Understanding of inherited and benign haematological diseases

Table 917: Mapping between COs of DMCH1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	✓	✓		✓			✓			✓			✓	✓	✓	✓			
CO2					✓			✓		✓					✓	✓			
CO3					✓			✓		✓			✓		✓	✓			

Table 918: Course Outcome of DMCH2

DMCH2: Laboratory Haematology	
Course Outcome	Students will be able to
CO1	Learning morphology and general hematology
CO2	Learning hemostasis and thrombosis work up
CO3	Learning work up for hemolytic anemia
CO4	Learning principles and hand-on in flow cytometry for leukemia/lymphoma
CO5	Learning bone marrow aspiration and biopsy procedure

Table 919: Mapping between COs of DMCH2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	✓	✓	✓					✓	✓	✓		✓	✓	✓	✓	✓			
CO2	✓	✓	✓	✓				✓	✓	✓		✓	✓	✓	✓	✓			
CO3	✓	✓	✓	✓				✓	✓	✓		✓	✓	✓	✓	✓			
CO4	✓	✓	✓	✓				✓	✓	✓		✓	✓	✓	✓	✓			
CO5	✓	✓	✓					✓	✓	✓		✓	✓	✓					

Table 920: Course Outcome of DMCH3

DMCH3: Clinical Haematology	
Course Outcome	Students will be able to
CO1	Understanding clinical hematology in total including benign and malignant aspects
CO2	Understanding basics of stem cell transplant
CO3	Learning protocol-based management of different hematological malignancies

Table 921: Mapping between COs of DMCH3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
CO2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓

Table 922: Course Outcome of DMCH4

DMCH4: Recent Advances in Haematology	
Course Outcome	Students will be able to
CO1	Learning recent advances in the field of haematology which includes both the diagnostic and therapeutic advances

Table 923: Mapping between COs of DMCH4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	✓	✓	✓	✓	✓	✓	✓				✓	✓					✓	✓	✓

### 8.9.25 DM IMMUNOLOGY AND RHEUMATOLOGY

The following PSOs are defined for the said Program

- PSO1: Clinically diagnose, investigate and manage a whole spectrum of immune-mediated rheumatic disorders and evaluate and manage various immunodeficiency states
- PSO2: Practically perform and interpret the common laboratory techniques used in Immunology Laboratory
- PSO3: Plan and undertake research in Clinical Immunology in the clinic, laboratory and community
- PSO4: Competent to understand and critically analyze the new literature in the field of Immunology and rheumatology.
- PSO5: Able to perform outpatient procedures like Intra articular injections (guided/un-guided), minor salivary gland biopsy, muscle/nerve biopsy and synovial fluid analysis.
- PSO6: Teach the subject to undergraduates and postgraduates in Medicine & Pediatrics.

Table 924: Course Outcome of DMCR1

DMCR1:Basic Science	
Course Outcome	Students will be able to
CO1	Knowledge of the biology of joints, articular structures, connective tissue and formation and resorption of bone as applicable in the practice of rheumatology
CO2	Knowledge of muscle, nerve, synovial physiology, collagen in normal and diseased connective tissue, Rheumatoid factor, Antinuclear antibodies, antiphospholipid antibodies, and immunology as applicable in practice of rheumatology
CO3	Skill in diagnostic procedures such as synovial fluid aspiration, aspiration and injection of joints and soft tissue

Table 925: Mapping between COs of DMCR1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓		✓			✓			✓			✓	✓	✓	✓		
CO2					✓			✓		✓					✓	✓		
CO3					✓			✓		✓			✓		✓	✓		

Table 926: Course Outcome of DMCR2

DMCR2: Pathogenesis of Rheumatic and Auto Immune Diseases	
Course Outcome	Students will be able to
CO1	Skill in examination of joints
CO2	Knowledge about specific articular and connective tissue diseases
CO3	Skill in the use of laboratory techniques in the practice of rheumatology and competence in management of patients with autoimmune rheumatic disorders, allergic diseases and immunodeficiency

Table 927: Mapping between COs of DMCR2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓					✓	✓	✓		✓	✓	✓	✓	✓		✓
CO2	✓	✓	✓	✓				✓	✓	✓		✓	✓	✓	✓	✓		✓
CO3	✓	✓	✓	✓				✓	✓	✓		✓	✓	✓	✓	✓		✓



Table 928: Course Outcome of DMCR3

DMCR3: Clinical Rheumatology	
Course Outcome	Students will be able to
CO1	Knowledge about medical orthopaedics, rehabilitation and reconstructive surgery in rheumatic diseases
CO2	Competence in the application of clinical pharmacology in rheumatic diseases and Skill in the management of rheumatology problems in the paediatric age group

Table 929: Mapping between COs of DMCR3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 930: Course Outcome of DMCR4

DMCR4:Recent Advances	
Course Outcome	Students will be able to
CO1	Learning recent advances in the field of Rheumatology which includes both the diagnostic and therapeutic advances

Table 931: Mapping between COs of DMCR4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓		✓	✓	✓	✓				✓	✓			✓	✓	✓	✓

### 8.9.26 DM CRITICAL CARE MEDICINE

The following PSOs are defined for the said Program

PSO1: Diagnosed and manage all patients with critical illness.

PSO2: Perform independently various procedures for management of critical illness.

PSO3: Perform and operate independently the ventilator management of patients.

PSO4: Perform and operate independently advanced hemodynamic monitoring.

PSO5: Supervise the activities of a critical care nurse, physiotherapist, respiratory technician and dietician wherever necessary.

PSO6: Perform point of care imaging modalities on bedside.

PSO7: Able to understand and supervise the functioning of extra corporeal therapies like CRRT and ECMO.

PSO8: To have knowledge and expertise in antibiotics prescription, antimicrobial resistance and infection control practices.

PSO9: To be able to counsel and communicate end of life information to the relatives of the patient.

Table 932: Course Outcome of DMCCM1

DMCCM1: Basic Medical Sciences Related to Critical Care Medicine	
Course Outcome	Students will be able to
CO1	Basic Knowledge regarding physiological process of vital organs and systems
CO2	Knowledge of pathophysiology of various disease process causing critically ill patients
CO3	Understanding of basic ventilatory operation
CO4	Basic understanding of bio-statistics
CO5	Understanding of all critical care equipment

Table 933: Mapping between COs of DMCCM1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1	✓		✓										✓						✓		
CO2			✓				✓						✓	✓			✓				
CO3	✓		✓				✓								✓		✓				
CO4									✓	✓		✓				✓					
CO5	✓		✓						✓						✓	✓			✓		

DMCCM2: Etiology, diagnosis and treatment of acute life-threatening medical and surgical diseases related to Critical Care Medicine

Table 934: Course Outcome of DMCCM2

DMCCM2	
Course Outcome	Students will be able to
CO1	Understanding of critical illnesses, various procedures in ICU and management of various medical emergencies
CO2	Understanding to advanced ventilator management
CO3	Understanding of advanced hemodynamic monitoring
CO4	Understanding of infectious diseases, anti-microbial agent, antimicrobial resistance and Basic knowledge regarding infection control practices
CO5	Art of communication and counselling to patient's relatives

Table 935: Mapping between COs of DMCCM2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	
CO1	✓	✓	✓										✓	✓								
CO2			✓		✓		✓							✓	✓		✓					
CO3			✓		✓		✓							✓		✓	✓					
CO4							✓		✓		✓		✓								✓	
CO5		✓		✓		✓		✓						✓								✓

Table 936: Course Outcome of DMCCM3

DMCCM3: Procedures, interventions, professionalism, ethics and research Methods related to Critical Care Medicine	
Course Outcome	Students will be able to
CO1	Understanding of critical care nephrology
CO2	Understanding of critical care neurology
CO3	Understanding of perioperative medicine and trauma science
CO4	Knowledge in acute coronary care and cardiac arrest management
CO5	Understanding of haematological, endocrinological and oncological issues in ICU

Table 937: Mapping between COs of DMCCM3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	
CO1	✓		✓	✓	✓								✓	✓					✓			
CO2	✓		✓	✓	✓								✓	✓				✓				
CO3	✓		✓	✓	✓								✓	✓				✓				
CO4	✓		✓	✓	✓								✓	✓				✓				
CO5	✓		✓	✓	✓								✓	✓								✓

Table 938: Course Outcome of DMCCM4

DMCCM4: Recent Advances in the field of Critical Care Medicine	
Course Outcome	Students will be able to
CO1	Knowledge regarding medico-legal issues, after life care
CO2	Learning recent advances in field of critical care medicine including diagnostics, monitoring and therapeutic advances

Table 939: Mapping between COs of DMCCM4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9
CO1		✓				✓					✓						✓		✓		✓
CO2					✓			✓	✓				✓	✓				✓	✓		

### 8.9.27 DM ENDOCRINOLOGY

The following PSOs are defined for the said Program

- PSO1: To develop a broad knowledge base in the diagnosis and management of common disorders in the Endocrinology.
- PSO2: To develop the requisite knowledge and skill to perform and interpret different dynamic hormone testing. To independently interpret endocrine related radiological and nuclear tests.
- PSO3: To practice within the bounds of impeccable ethical standards and provide compassionate care to all patients.
- PSO4: Able to understand the basic requirements to set up a professional office of medical care including the provision for endocrine services compliant with current standards of quality care.

Table 940: Course Outcome of DMEN1

DMEN1: Basic Science in Endocrinology	
Course Outcome	Students will be able to
CO1	Clear understanding of the basics of hormone synthesis and action
CO2	Understanding of basics of regulation of various endocrine hormone axis
CO3	Understanding of pathogenesis and genetics behind various endocrine disorders
CO4	Understand the basic mechanisms of symptomatology of endocrine disorders

Table 941: Mapping between COs of DMEN1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1		✓		✓				✓		✓			✓	✓		
CO2		✓						✓		✓			✓	✓		
CO3		✓		✓				✓		✓			✓	✓		
CO4		✓		✓	✓	✓		✓		✓			✓	✓		

Table 942: Course Outcome of DMEN2

DMEN2: Clinical Endocrinology	
Course Outcome	Students will be able to
CO1	Learning clinical manifestations, diagnostic work up and management of endocrine disorders
CO2	Clear understanding of the diseases in paediatric population and its management
CO3	Learning of laboratory techniques in endocrinology
CO4	Learning about diagnosis and management of endocrine emergencies
CO5	Learning molecular genetics methods related to Endocrinology

Table 943: Mapping between COs of DMEN2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
CO2	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
CO3		✓	✓	✓	✓				✓	✓		✓	✓	✓	✓	✓
CO4	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
CO5		✓	✓						✓	✓		✓	✓	✓		

Table 944: Course Outcome of DMEN3

DMEN3: Applied and Experimental Endocrinology	
Course Outcome	Students will be able to
CO1	Understanding clinical management of benign and malignant endocrine disorders
CO2	Learning principles, utilization and interpretation of specialized investigations in Endocrinology
CO3	Learning approaches to the clinical symptomatology and replacement therapies in endocrine diseases
CO4	Learning principles of preventive and rehabilitative therapies related to endocrinology

Table 945: Mapping between COs of DMEN3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO2		✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓
CO3	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO4	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓

Table 946: Course Outcome of DMEN4

DMEN4: Applied and Experimental Endocrinology	
Course Outcome	Students will be able to
CO1	Learning recent advances in the field of Endocrinology which includes both the diagnostic and therapeutic advances

Table 947: Mapping between COs of DMEN4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓

### 8.9.28 DM MEDICAL ONCOLOGY

The following PSOs are defined for the said Program

- PSO1: To develop clinical judgment and technical skills in diagnosis and the total management of patients with neoplastic diseases, with various modalities of treatment individually or in combination.
- PSO2: To make the student expert in handling all kinds of medical emergencies arising either due to cancer spread or problems related to therapy. The latter include: a) infections secondary to severe neutropenia, respiratory distress/failure, renal insufficiency, hepatic insufficiency, and neurological disturbance, b) hemorrhagic complications, c) electrolyte disturbance, d) other toxicities
- PSO3: To impart full knowledge concerning cancer chemotherapy, hormone therapy, biologics, gene therapy, immune therapy; their mechanism of action, side effects, mode of administration, interaction with other drugs and their therapeutic effects.
- PSO4: To make the candidate familiar with all the modern diagnosis aids including ultrasound, CT scan, MRI, PET scans, mammography, endoscopy and radionuclide

scans. They will be trained to interpret these images and also to independently assess treatment response from imaging modalities.

PSO5: To make the fellow understand the importance of tumor registry, medical records maintenance and its benefits in analysing data and research methodologies.

PSO6: To make the candidate fully conversant with and trained in various aspects of high dose chemotherapy and stem cell transplantation (both allogeneic and autologous) including organising the logistics of a transplant, scheduling of treatment, indication for the use of growth factors, GVHD prophylaxis and management of various complications including acute and chronic GVHD.

PSO7: To make them expert in managing the terminally ill patients. They would be given knowledge regarding pain management and other palliative care measures.

PSO8: To make them well versed in various administrative aspects so as to help them in the initial phases of their career.

Table 948: Course Outcome of DMMO1

DMMO1: Molecular Oncology and Basic Cancer Therapeutics	
Course Outcome	Students will be able to
CO1	Molecular basis of cancer
CO2	Radiation physics and radiobiology, Tumor Biology
CO3	Immunology and Pharmacology of anti-cancer agents

Table 949: Mapping between COs of DMMO1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1		✓	✓	✓							✓		✓		✓			✓		
CO2		✓	✓	✓							✓		✓			✓			✓	
CO3		✓	✓	✓							✓		✓	✓	✓			✓	✓	

Table 950: Course Outcome of DMMO2

DMMO2: Adult Solid Tumours	
Course Outcome	Students will be able to
CO1	General Oncology, Adult Solid tumours
CO2	Tumour Pathology, Staging, Diagnosis, Imaging in cancer
CO3	Nuclear Medicine

Table 951: Mapping between COs of DMMO2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓		✓		✓	
CO2	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	
CO3	✓	✓	✓	✓				✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	

Table 952: Course Outcome of DMMO3

DMMO3: Cancers of Childhood, Haemato oncology and Transplant	
Course Outcome	Students will be able to
CO1	Cancers of Childhood
CO2	Haemato oncology
CO3	Stem cell transplant

Table 953: Mapping between COs of DMMO3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO2	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
CO3	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓

Table 954: Course Outcome of DMMO4

DMMO4: Recent Advances, Palliative Care, Oncologic Emergencies, Supportive Care	
Course Outcome	Students will be able to
CO1	Recent advances
CO2	Palliative care
CO3	Oncologic emergencies, Supportive care

Table 955: Mapping between COs of DMMO4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
CO2	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓	
CO3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			✓		✓



### 8.9.29 DM NEONATOLOGY

The following PSOs are defined for the said Program

- PSO1: To develop clinical judgment and technical skills in diagnosis and the total management of various diseases of neonates, with various management options individually or in combination.
- PSO2: To make the student expert in handling all kinds of neonatal emergencies. The emergencies related to management of inborn and outborn neonates, like managing an apneic/gasping neonate at ER, establishing airways, CPR, management of asphyxiated neonate in labour room, etc.
- PSO3: To impart knowledge concerning IV fluids therapy, Total parenteral nutrition, rational use of various intravenous medications, effective use of various equipments like CPAP, Mechanical ventilation with various modes of operations, use of Deliver room CPAP etc.
- PSO4: To make the candidate familiar with all the modern diagnosis aids including ultrasound, CT scan, MRI, PET scans, HIDA scan. They will be trained to interpret these images and also to independently assess treatment response from imaging modalities.
- PSO5: To make the fellow understand the importance of medical records maintenance and its benefits in analysing data and research methodologies.
- PSO6: To impart basic knowledge in research methodologies, basic statistics, conducting clinical trials, stimulating the candidate for research works including various projects, for attending/ presenting paper in various national/ international conferences
- PSO7: To make them expert in managing the critically sick neonates. They would be given knowledge regarding pain management and other developmentally supportive care.
- PSO8: To make them well versed in various administrative aspects so as to help them in the initial phases of their career.

Table 956: Course Outcome of DMNEO1

DMNEO1: Basic Sciences as Applied to Neonatology; Research Methodology	
Course Outcome	Students will be able to
CO1	Basic Sciences as applied to Neonatology
CO2	Research Methodology
CO3	Embryology and Development
CO4	Perinatology, Resuscitation and Equipment

Table 957: Mapping between COs of DMNEO1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓	✓	✓	✓		✓	✓			✓	✓		✓							
CO2					✓			✓	✓		✓									
CO3		✓		✓		✓				✓	✓		✓							
CO4		✓		✓	✓	✓	✓			✓	✓		✓							

Table 958: Course Outcome of DMNEO2

DMNEO2: Clinical Neonatology	
Course Outcome	Students will be able to
CO1	Basic of Clinical Neonatology
CO2	Nutrition
CO3	Respiratory, Gastrointestinal, Hepatobiliary and Cardiovascular System

Table 959: Mapping between COs of DMNEO2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 960: Course Outcome of DMNEO3

DMNEO3: Intensive Care, Advances in Neonatology	
Course Outcome	Students will be able to
CO1	Basic of Neurology
CO2	Hemato-oncology, Infections, Renal
CO3	Endocrinology and Metabolic diseases

Table 961: Mapping between COs of DMNEO3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 962: Course Outcome of DMNEO4

DMNEO4: Community Neonatology National MCH Programmes	
Course Outcome	Students will be able to
CO1	Recent advances neonatal surgery; neurodevelopment follow up, rehabilitation
CO2	Community Neonatology
CO3	Neuro developmental Evaluation and Organization of New-born Care givers

Table 963: Mapping between COs of DMNEO4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1			✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓			✓		✓
CO2	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
CO3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			✓	✓	✓

### 8.9.30 DM NEPHROLOGY

The following PSOs are defined for the said Program

PSO1: Diagnose and manage all patients with acute kidney disease and chronic kidney disease.

PSO2: Diagnose and manage all patients with nephrotic syndrome and nephritic syndrome.

PSO3: Manage patients in hemodialysis unit and complications of hemodialysis.

PSO4: Manage patients on CAPD and Acute PD.

PSO5: Interpret laboratory data and synthesize laboratory and clinical data so as to provide rational solutions for patients with renal problems.

PSO6: Supervise the activities of a hemodialysis technician, CAPD service providers and laboratory services wherever necessary.

PSO7: To provide the state of art therapy to patients with renal disorders.

PSO8: To have knowledge and expertise to do Kidney transplantation.

PSO9: To be able to put HD lines (IJV catheter, Femoral line, Subclavian catheter), putting Permacaths,. CAPD catheter, to perform Kidney biopsies using USG.

PSO10: To be able to manage patients requiring critical care nephrology.

Table 964: Course Outcome of DMNP1

DMNP1: Basic Science of Nephrology	
Course Outcome	Students will be able to
CO1	Clear understanding of the basics of renal anatomy, physiology and /embryology
CO2	Understanding of basics of renal histopathology and doing USG guided renal biopsy
CO3	Understanding of disorders of electrolyte and acid-basemetabolism

Table 965: Mapping between COs of DMNP1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	✓	✓			✓		✓		✓								✓					
CO2	✓	✓						✓		✓				✓			✓		✓		✓	
CO3	✓	✓		✓		✓			✓				✓				✓		✓			✓

Table 966: Course Outcome of DMNP2

DMNP2: Applied Nephrology including pathology, pathophysiology and dialysis	
Course Outcome	Students will be able to
CO1	Learning evaluation and treatment of primary glomerulonephritis
CO2	Learning evaluation and treatment of secondary glomerulonephritis
CO3	Learning work up for RPGN and its management
CO4	Learning evaluation and management of acute kidney injury
CO5	Managing haemodialysis and peritoneal dialysis and their complications

Table 967: Mapping between COs of DMNP2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	✓	✓	✓	✓		✓			✓					✓			✓		ü			
CO2	✓	✓	✓	✓		✓			✓	✓				✓			✓		✓			
CO3	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓			✓		✓			✓
CO4	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓				✓		✓			✓
CO5	✓	✓	✓				✓	✓		✓	✓	✓	✓		✓	✓		✓	✓		✓	✓

Table 968: Course Outcome of DMNP3

DMNP3: Clinical Nephrology and Renal Transplantation	
Course Outcome	Students will be able to
CO1	Understanding causes and pathophysiology of CKD
CO2	Learning management of CKD and its complications
CO3	Learning donor and recipient evaluation in kidney transplantation, pre and perioperative management of transplant surgery
CO4	Learning to manage transplant rejection, posttransplant infections and other complications

Table 969: Mapping between COs of DMNP3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	✓	✓				✓			✓	✓			✓				✓		✓			
CO2	✓		✓	✓	✓		✓	✓		✓	✓	✓	✓		✓		✓	✓	✓			✓
CO3		✓	✓				✓	✓		✓	✓	✓	✓				✓		✓	✓		✓
CO4	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓				✓		✓	✓		✓

Table 970: Course Outcome of DMNP4

DMNP4: Recent Advances in Nephrology	
Course Outcome	Students will be able to
CO1	Learning recent advances in the field of nephrology which includes both the diagnostic and therapeutic advances

Table 971: Mapping between COs of DMNP4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10
CO1	✓				✓	✓	✓	✓		✓	✓				✓				✓			✓

### 8.9.31 DM NEUROLOGY

The following PSOs are defined for the said Program

PSO1: Acquire comprehensive knowledge of the basics of Neurology including all allied specialties related to Neurology like Neuroanatomy, Neurophysiology, Neurochemistry, Neuropharmacology, Neuroimaging, Neuropathology, Neuroinfectious, Neuroimmunology, Preventive Neurology, Neuroepidemiology, Pediatric Neurology and Neurosurgery.

PSO2: Possess a complete knowledge of all the commonly used Neurophysiological diagnostic Tests like Electroencephalography, Electromyography, Evoked Potentials.

PSO3: Possess knowledge of the recent advances in the subject of Neurology and all its allied specialties and working knowledge of the sophisticated and routine equipments, consumables used in Neurology especially with respect to Neurochemistry, Neurogenetic and molecular diagnostic techniques.

PSO4: Possess knowledge of principles of research work in the field of Neurology in both the Clinical and experimental field with the ability to analyze data.

PSO5: Acquire knowledge in the performance and interpretation of special investigations such as Polysomnography, Video EEG, autonomic function tests, Transcranial Doppler tests.

PSO6: Acquire knowledge in interpretation of common neuroimaging investigations such as CT scanning, MRI scanning, MR and Digital subtraction angiography, MR spectroscopy and Single Photon Emission Computerized Tomography.

Table 972: Course Outcome of DMNU1

DMNU1: Basic Sciences Related to Neurology	
Course Outcome	Students will be able to
CO1	Understanding the basics of neurology
CO2	Knowledge pathological and etiological processes of neurological diseases
CO3	Thorough about efficacy and side effects of drugs
CO4	Expert in clinical trial and writing research papers
CO5	Develop skills as a self-directed learner, recognise continuing educational needs: select and use appropriate learning resources

Table 973: Mapping between COs of DMNU1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	✓	✓			✓	✓			✓	✓			✓			✓		
CO2		✓						✓		✓			✓					
CO3		✓						✓		✓			✓					
CO4									✓	✓	✓					✓		
CO5	✓		✓	✓		✓	✓	✓				✓				✓	✓	✓

Table 974: Course Outcome of DMNU2

DMNU2: Clinical Neurology including Paediatric Neurology and Neuropsychiatry	
Course Outcome	Students will be able to
CO1	Understanding the basics of neurology
CO2	Knowledge pathological and etiological processes of neurological diseases
CO3	Thorough about efficacy and side effects of drugs
CO4	Expert in clinical trial and writing research papers
CO5	Develop skills as a self-directed learner, recognise continuing educational needs: select and use appropriate learning resources

Table 975: Mapping between COs of DMNU2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1				✓	✓					✓			✓					
CO2		✓		✓	✓			✓	✓	✓	✓	✓	✓	✓	✓			
CO3			✓	✓		✓		✓		✓	✓	✓		✓	✓			
CO4	✓			✓			✓				✓	✓			✓			
CO5					✓				✓		✓	✓	✓			✓		

Table 976: Course Outcome of DMNU3

DMNU3: Diagnostic and Interventional Neurology including Neurological Instrumentation	
Course Outcome	Students will be able to
CO1	Thorough about basic neurophysiological tests like EEG, NCS, EMG, EP and able to do and interprets those tests independently
CO2	Experts in reading and reporting the CT, MRI with various protocols, Angiography, USG, Doppler study, X-rays, ECG
CO3	Basic knowledge about ECHO, functional MRI, SPECT, PET, DTI and other newer radiologic techniques
CO4	Acquire skills in invasive procedures such as lumbar puncture, CSF manometry; assisting in digital subtraction angiography and intraarterial thrombolysis; and Nerve and muscle biopsy and their interpretation of relevant histopathology
CO5	Acquire exposure in sophisticated neuromodulation procedures such as planning of deep brain stimulation, vagal nerve stimulation, transcranial magnetic stimulation

Table 977: Mapping between COs of DMNU3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1		✓		✓	✓			✓	✓	✓				✓			✓	
CO2		✓		✓	✓			✓	✓	✓				✓				✓
CO3			✓	✓				✓	✓				✓	✓			✓	
CO4			✓					✓		✓	✓		✓		✓		✓	
CO5			✓			✓		✓					✓	✓	✓			

Table 978: Course Outcome of DMNU4

DMNU4: Recent Advances in Neurology	
Course Outcome	Students will be able to
CO1	Learning the recent advances in field of neurology which includes both the diagnostic and therapeutic advances
CO2	Be able to teach undergraduate students MBBS and Post Graduate Students MD Med or Pediatrics or Psychiatry as well as investigative Neurology
CO3	Be able to perform Clinical and Investigative studies and to present in Seminars, meetings and conferences etc
CO4	Have the ability to organise specific teaching and training programmes for para medical staff, associated professionals and patient education programmes
CO5	Able to apply sound clinical judgment and rational cost-effective investigations for the diagnosis and management of Neurology Cases in the OPD, Wards, Emergency Room and Intensive Care unit

Table 979: Mapping between COs of DMNU4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1			✓	✓	✓			✓							✓			
CO2		✓								✓		✓	✓			✓		
CO3	✓					✓		✓	✓	✓	✓	✓		✓		✓		✓
CO4	✓						✓	✓		✓	✓	✓	✓	✓				✓
CO5	✓			✓		✓	✓	✓			✓	✓		✓			✓	✓

### 8.9.32 DM GASTROENTEROLOGY

The following PSOs are defined for the said Program

PSO1: To develop a broad knowledge base in the diagnosis and management of common disorders in the fields of Gastroenterology and Hepatology DM Gastroenterology



PSO2: To develop the requisite skills to practice both diagnostic and therapeutic endoscopy to a reasonable degree of proficiency in order to allow the independent and safe practice of endoscopy in the future.

PSO3: To practice within the bounds of impeccable ethical standards and provide compassionate care to all patients.

PSO4: Able to understand the basic requirements to set up a professional office of medical care including the provision for endoscopy services compliant with current standards of quality care.

Table 980: Course Outcome of DMGA1

DMGA1: Basic Sciences Applied to the Gastroenterology	
Course Outcome	Students will be able to
CO1	Understand the basic mechanisms of gastro-intestinal symptomatology and approach to management
CO2	Clear understanding on the physiology of gastrointestinal motor and secretory function
CO3	Neurohormonal functions of the gastrointestinal tract
CO4	Basics of gastrointestinal neoplasia and clinical application
CO5	Physiology of digestion, absorption and assimilation of food in the human body

Table 981: Mapping between COs of DMGA1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	✓	✓	✓	✓			✓		✓		✓	✓	✓	✓	✓	✓
CO2		✓		✓		✓							✓	✓		✓
CO3		✓		✓					✓	✓			✓	✓	✓	✓
CO4	✓	✓	✓	✓		✓				✓			✓	✓		✓
CO5		✓	✓	✓		✓		✓		✓		✓	✓			

Table 982: Course Outcome of DMGA2

DMGA2: General Gastroenterology including Pediatric and Preventive Gastroenterology	
Course Outcome	Students will be able to
CO1	Complete knowledge of the general gastroenterology mainly the upper GI tract diseases
CO2	Clear understanding of the diseases in paediatric population and its management
CO3	Knowledge of preventive methodologies in gastroenterology

Table 983: Mapping between COs of DMGA2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO2	✓	✓		✓		✓				✓	✓		✓	✓		
CO3	✓							✓		✓	✓	✓	✓	✓	✓	✓

Table 984: Course Outcome of DMGA3

DMGA3: Hepatobiliary, Pancreatic Diseases	
Course Outcome	Students will be able to
CO1	Complete overview of hepatobiliary diseases in total
CO2	Understanding the pancreatic pathologies and management

Table 985: Mapping between COs of DMGA3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO2	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓

Table 986: Course Outcome of DMGA4

DMGA4:Recent Advances in the Gastroenterology	
Course Outcome	Students will be able to
CO1	Complete knowledge of recent advances in the field of gastroenterology which includes the diagnostic, therapeutic advances

Table 987: Mapping between COs of DMGA4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	✓		✓					✓	✓	✓		✓	✓	✓		✓

### 8.9.33 MCh NEUROSURGERY

The following PSOs are defined for the said Program

PSO1: Should be well acquainted with the current literature on relevant aspects of the basic, investigative, clinical and operative neurosciences.

PSO2: Should have learned indications and performance skills of common neurosurgical operations.

PSO3: Should have acquired performance skills and ability to interpret relevant clinical investigations.

PSO4: Should be able to diagnose, plan investigations and treat common conditions in the speciality by relevant current therapeutic methods.

PSO5: Should be acquainted with allied and general clinical disciplines to ensure appropriate and timely referral. item[PSO6:]Should be capable of imparting basic neurosurgical training. item[PSO7:]Should be able to identify, frame and carry out research proposals in the relevant speciality. item[PSO8:]Should develop proper attitudes towards patients, subordinates, colleagues and seniors.

Table 988: Course Outcome of MChNS1

MChNS1: Basic Neurosciences	
Course Outcome	Students will be able to
CO1	Clear understanding of the basics of Neurosurgery
CO2	Understanding of basic anatomy and physiology of human nervous system
CO3	Understanding of developmental and acquired neurosurgical diseases and its ethical practice

Table 989: Mapping between COs of MChNS1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1		✓										✓								
CO2		✓										✓								
CO3	✓										✓						✓		✓	

Table 990: Course Outcome of MChNS2

MChNS2: Clinical Neurology and Neurosurgery	
Course Outcome	Students will be able to
CO1	Learning radiological correlation to diagnose neurosurgical disorders
CO2	Learning pathological correlation to establish diagnosis
CO3	Learning work up for taking up of cases for neurosurgery

Table 991: Mapping between COs of MChNS2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1				✓											✓					
CO2				✓											✓					
CO3						✓								✓		✓				

Table 992: Course Outcome of MChNS3

MChNS3: Operative Neurosurgery	
Course Outcome	Students will be able to
CO1	Learning principles and hand-on in operative procedures
CO2	Understanding the use of different neurosurgical instruments like microscope, C- arm, CUSA, Endoscope, Drill etc. and their maintenance
CO3	Understanding the management of complications occurring out of any neurosurgical procedure

Table 993: Mapping between COs of MChNS3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1					✓									✓						
CO2								✓								✓				
CO3							✓							✓						

Table 994: Course Outcome of MChNS4

MChNS4: Recent Advances in Neurosurgery	
Course Outcome	Students will be able to
CO1	Learning recent advances in the field of Neurosurgery
CO2	Correlating new diagnostic, operative and technical advances and its application in neurosurgery
CO3	Understanding how to prepare scientific papers and Introduction to the techniques involved in the organization and development of a department

Table 995: Mapping between COs of MChNS4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8
CO1													✓							
CO2								✓					✓							
CO3									✓	✓		✓						✓	✓	

### 8.9.34 MCh SURGICAL GASTROENTEROLOGY

The following PSOs are defined for the said Program

- PSO1: Expertise in the management protocols of the benign and malignant diseases of gastrointestinal tract, with special interest in surgical management.
- PSO2: Ability to perform simple and complex operative procedures on the Gastrointestinal tract and associated organs including minimally invasive surgery.
- PSO3: Counselling patients and relatives regarding the daily status of the patients and the prognosis, including active participation in transplant counselling.
- PSO4: Ability to carry out research, scientifically review research and present research findings to audience.
- PSO5: To practice within the bounds of ethical standards and provide compassionate care to all patients.

Table 996: Course Outcome of MCh SGE1

MCh SGE1: Basic Sciences Applied to Surgical Gastroenterology	
Course Outcome	Students will be able to
CO1	To understand the epidemiology of diseases, basic anatomy of gastrointestinal tract and hepatopancreatic biliary system
CO2	To understand the physiology of gastrointestinal and hepatopancreatic biliary system and its alteration after diseases or surgeries
CO3	To understand the basics of coagulation, wound healing, sepsis, immunology and general surgical complications and their management; knowledge about audit, research methodology and ethics

Table 997: Mapping between COs of MCh SGE1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	✓	✓				✓		✓					✓				
CO2		✓						✓					✓				
CO3		✓						✓	✓	✓	✓	✓	✓		✓	✓	

Table 998: Course Outcome of MCh SGE2

MCh SGE2: Clinical Application in Surgical Gastroenterology-General	
Course Outcome	Students will be able to
CO1	To understand the various diagnostic methods and how to apply judiciously in dealing with gastrointestinal diseases
CO2	To understand the practical approach for malignant and nonmalignant cases of GI tract and the protocol for the management
CO3	To Understand the principles, surgical procedures and the complications in surgical gastroenterology

Table 999: Mapping between COs of MCh SGE2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	✓	✓	✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓
CO2				✓	✓	✓	✓	✓					✓	✓	✓	✓	✓
CO3				✓	✓	✓	✓	✓					✓	✓	✓	✓	✓

Table 1000: Course Outcome of MCh SGE3

MCh SGE3: Clinical Application in Surgical Gastroenterology- related to hepatobiliary and pancreatic diseases	
Course Outcome	Students will be able to
CO1	To understand the various diagnostic methods and how to apply in dealing with hepatopancreaticobiliary system
CO2	To understand the protocol of management for malignant and non-malignant cases of liver, pancreas and biliary system
CO3	To Understand the principles, surgical procedures and the complications in hepato- pancreaticobiliary system

Table 1001: Mapping between COs of MCh SGE3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1				✓	✓	✓	✓	✓					✓	✓	✓	✓	✓
CO2				✓	✓	✓	✓	✓					✓	✓	✓	✓	✓
CO3				✓	✓	✓	✓	✓					✓	✓	✓	✓	✓

Table 1002: Course Outcome of MCh SGE4

MCh SGE4: Recent Advances in Surgical Gastroenterology	
Course Outcome	Students will be able to
CO1	To know the recent researches being conducted in various diagnostic procedures in GI surgery
CO2	To be aware of the novel surgical techniques and treatment strategies adopted recently
CO3	To understand the new development in medical managements and chemoradiation in GI oncology

Table 1003: Mapping between COs of MCh SGE4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1			✓		✓			✓					✓	✓	✓	✓	
CO2			✓		✓			✓					✓	✓	✓	✓	
CO3			✓		✓			✓					✓	✓	✓	✓	

### 8.9.35 MCh SURGICAL ONCOLOGY

The following PSOs are defined for the said Program

PSO1: Diagnose, Evaluate and manage all patients with non-malignant and malignant tumors.

PSO2: Able to interpret independently about different laboratory and imaging investigations used for diagnosing solid tumors.

PSO3: Interpret laboratory data and synthesize laboratory and clinical data so as to provide rational solutions for patients with malignancy.

PSO4: To provide the state of art therapy to patients with solid tumors.

PSO5: To be able to prepare and perform protocol-based treatment for various malignancies.

Table 1004: Course Outcome of MCh SO1

MCh SO1: Basic sciences as applied to Surgical Oncology	
Course Outcome	Students will be able to
CO1	Understanding molecular basis of cancer
CO2	Learning essentials of Radiation Therapy and Chemotherapy
CO3	Learning Cancer Prevention and Screening

Table 1005: Mapping between COs of MCh SO1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1		✓								✓				✓			
CO2			✓	✓		✓				✓						✓	✓
CO3	✓			✓		✓		✓		✓				✓	✓		

Table 1006: Course Outcome of MCh SO2

MCh SO2: Clinical Surgical Oncology - I	
Course Outcome	Students will be able to
CO1	Understanding cancers of the gastrointestinal tract
CO2	Understanding cancers of the genitourinary system
CO3	Learning Gynaecologic cancers

Table 1007: Mapping between COs of MCh SO2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1		✓			✓			✓		✓	✓	✓	✓	✓	✓	✓	✓
CO2		✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3		✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1008: Course Outcome of MCh SO3

MCh SO3: Clinical Surgical Oncology - II	
Course Outcome	Students will be able to
CO1	Learning Head & Neck cancers
CO2	Understanding Thoracic malignancy
CO3	Learning Breast cancer, Soft tissue sarcoma, Bone and Skin cancer
CO4	Reconstructive Surgery

Table 1009: Mapping between COs of MCh SO3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1		✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2		✓		✓			✓	✓		✓	✓		✓	✓	✓	✓	✓
CO3		✓		✓			✓	✓		✓	✓		✓	✓	✓	✓	✓
CO4		✓	✓	✓		✓	✓	✓		✓							✓



Table 1010: Course Outcome of MCh SO4

MCh SO4: Recent advances in Surgical Oncology	
Course Outcome	Students will be able to
CO1	Learning recent advances in the field of surgical oncology which includes both the diagnostic and therapeutic advances

Table 1011: Mapping between COs of MCh SO4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1			✓			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

### 8.9.36 MCh UROLOGY

The following PSOs are defined for the said Program

PSO1: Diagnose and manage all patients with non-malignant and malignant Urological disorders.

PSO2: Perform independently majority of endo-urological, open and laparoscopic procedures.

PSO3: To provide the state of art therapy to patients with Urological disorders.

PSO4: To have knowledge and experience in Renal Transplant.

PSO5: To develop an attitude for clinical research in the field of urology and renal transplant.

Table 1012: Course Outcome of MCh UR1

MCh UR1: Basic Science	
Course Outcome	Students will be able to
CO1	Basics of anatomy and physiology of genito-urinary system
CO2	Perioperative care, basic surgical skills of open, endoscopic and laparoscopic and robotic surgery and biomedical equipment
CO3	Investigative Urology – including radiological imaging and nuclear medicine
CO4	Understanding basics of renal transplant

Table 1013: Mapping between COs of MCh UR1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	✓	✓					✓	✓	✓	✓	✓	✓				✓	
CO2		✓						✓		✓	✓	✓	✓	✓	✓	✓	
CO3			✓	✓				✓		✓		✓	✓		✓	✓	✓
CO4	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1014: Course Outcome of MCh UR2

MCh UR2: General Adult and Paediatric Urology	
Course Outcome	Students will be able to
CO1	Human reproduction, Andrology and infertility
CO2	Learning and interpreting urodynamics
CO3	Urolithiasis, obstructive uropathy, Trauma, Reconstructive Urology, Infections and STDs, retroperitoneal diseases, Urogynaecology
CO4	Principles of medical aspects of kidney disease
CO5	Learning pediatric urology

Table 1015: Mapping between COs of MCh UR2and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
CO2		✓	✓	✓			✓				✓	✓	✓		✓		✓
CO3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
CO4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5		✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓

Table 1016: Course Outcome of MCh UR3

MCh UR3: Regional Systemic Urology and Oncology	
Course Outcome	Students will be able to
CO1	Management of benign and malignant urological disorders
CO2	Understanding basics of paediatric malignancies
CO3	Learning adjuvant therapy protocols

Table 1017: Mapping between COs of MCh UR3and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
CO2		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
CO3		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓

Table 1018: Course Outcome of MCh UR4

MCh UR4: Recent Advances	
Course Outcome	Students will be able to
CO1	Learning recent advances in the field of Urology which includes both the diagnostic and therapeutic advances

Table 1019: Mapping between COs of MCh UR4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					

### 8.9.37 MCh PLASTIC AND RECONSTRUCTIVE SURGERY

The following PSOs are defined for the said Program

PSO1: To develop a broad knowledge base in the diagnosis and management of burns, trauma, congenital deficiencies, hand anomalies and aesthetic plastic surgery.

PSO2: To develop the requisite skills to practice both conservative and operative procedures to a reasonable degree of proficiency in order to allow the independent and safe practice of plastic surgery in the future.

PSO3: To practice within the bounds of impeccable ethical standards and provide compassionate care to all patients.

PSO4: Able to understand the basic requirements to set up a professional office of medical care compliant with current standards of quality care.

Table 1020: Course Outcome of MCh PS1

MCh PS1: Basic Science Related to Plastic Surgery	
Course Outcome	Students will be able to
CO1	Understand the basic mechanisms of wound healing, degree of burns, skin, nerve and bone grafts and approach to patient management
CO2	Clear understanding on the physiology of scar formation and its management, vascular territories of skin, flap classifications, regional blocks, anaesthesia and pain management in burns and plastic surgery
CO3	To understand the history of plastic surgery, the role of ethics, medicolegal issues, patient safety in reconstructive and aesthetic surgery
CO4	Basics of repair, grafting, tissue engineering, stem cells, flap pathophysiology and pharmacology, principles of microvascular surgery
CO5	To know about tissue expansion, principles of radiation, facial prostheses

Table 1021: Mapping between COs of MCh PS1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	✓	✓											✓			
CO2				✓				✓						✓		
CO3			✓			✓	✓	✓		✓	✓	✓			✓	✓
CO4	✓		✓	✓	✓				✓					✓		
CO5			✓		✓											

Table 1022: Course Outcome of MCh PS2

MCh PS2: Clinical Plastic Surgery	
Course Outcome	Students will be able to
CO1	To learn about craniofacial trauma, head and neck reconstructions, embryology of clefts, cleft lip and palate repair and to manage its complications, craniofacial clefts, paediatric facial fractures, syndromic diseases and their management in children
CO2	Clear understanding of vascular anomalies, paediatric tumours, reconstruction of urogenital defects
CO3	To have comprehensive knowledge on the upper and lower extremities, management of trauma of the extremities, flaps for defect coverage of the extremities, skeletal reconstruction, foot reconstruction, tendon injury management
CO4	To have comprehensive knowledge on trunk anatomy, chest, abdominal wall and back reconstruction, reconstruction of male and female genitalia, pressure sores and perineal reconstruction
CO5	To know about oncological breast reconstruction, congenital hand defects, paralytic disorders, brachial plexus injuries

Table 1023: Mapping between COs of MCh PS2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓
CO2	✓	✓		✓		✓					✓		✓			
CO3	✓		✓	✓				✓		✓	✓	✓	✓	✓	✓	
CO4	✓	✓		✓							✓		✓		✓	
CO5				✓							✓		✓			

Table 1024: Course Outcome of MCh PS3

MCh PS3: Operative Plastic Surgery	
Course Outcome	Students will be able to
CO1	Knowledge on how to manage a cosmetic patient, establishing a cosmetic practice and patient safety in aesthetic surgery
CO2	To learn about aesthetic surgery of face, botulinum toxins, chemical peels and resurfacing techniques, facelift techniques, blepharoplasty, fat grafting, rhinoplasty, otoplasty and hair restoration
CO3	To have comprehensive knowledge on liposuction, abdominoplasty, body contouring, buttock augmentation and aesthetic genital surgery
CO4	Knowledge on aesthetic breast surgery, breast augmentation and reduction, mastopexy, surgery for gynaecomastia, breast implants

Table 1025: Mapping between COs of MCh PS3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓
CO2	✓	✓	✓					✓		✓				✓		✓
CO3		✓	✓					✓		✓				✓		✓
CO4		✓	✓					✓		✓						✓

Table 1026: Course Outcome of MCh PS4

MCh PS4: Recent Advances in Plastic Surgery	
Course Outcome	Students will be able to
CO1	To have knowledge on robotics in plastic surgery, telemedicine and simulation, tissue engineering
CO2	To know about the latest implants and biomaterials in plastic surgery, facial prostheses, transplantations in plastic surgery
CO3	Knowledge on computerized surgical planning in head and neck reconstruction, coupling devices in vascular surgery

Table 1027: Mapping between COs of MCh PS4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	✓	✓		✓		✓	✓	✓	✓	✓			✓		✓	✓
CO2			✓								✓	✓		✓		
CO3				✓	✓									✓		✓

### 8.9.38 MCh PEDIATRIC SURGERY

Table 1028: Course Outcome of MCh PSU 1

MCh PSU 1: Basic Sciences Applied to Paediatric Surgery	
Course Outcome	Students will be able to
CO1	Basics of anatomy and physiology of new-born and children
CO2	Perioperative care, basic surgical skills of open, endoscopic and laparoscopic and biomedical equipment
CO3	Investigative Paediatric Surgery – including nuclear medicine and pathology
CO4	Understanding basics of Paediatric transplant and trauma

Table 1029: Mapping between COs of MCh PSU 1 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	✓	✓					✓	✓	✓	✓	✓	✓
CO2		✓						✓		✓	✓	✓
CO3			✓	✓				✓		✓		✓
CO4	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓

Table 1030: Course Outcome of MCh PSU 2

MCh PSU 2: Neonatal Surgery, General Paediatric Surgery and Paediatric Urology	
Course Outcome	Students will be able to
CO1	Neonatal physiology and surgical disorders
CO2	Paediatric physiology and surgical disorders
CO3	Learning and interpreting paediatric imaging
CO4	Principles of medical aspects of Paediatric Surgical conditions
CO5	Learning paediatric urology

Table 1031: Mapping between COs of MCh PSU 2 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
CO2		✓	✓	✓			✓				✓	✓
CO3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5		✓	✓	✓		✓	✓	✓		✓	✓	✓

Table 1032: Course Outcome of MCh PSU 3

MCh PSU 3: Regional Systemic Paediatric Surgery	
Course Outcome	Students will be able to
CO1	Management of benign and malignant Paediatric Surgery disorders
CO2	Understanding basics of paediatric emergencies
CO3	Learning fundamental treatment guidelines

Table 1033: Mapping between COs of MCh PSU 3 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1034: Course Outcome of MCh PSU 4

MCh PSU 4: Recent Advances in Paediatric Surgery	
Course Outcome	Students will be able to
CO1	Learning recent advances in the field of Paediatric Surgery which includes both the diagnostic and therapeutic advances

Table 1035: Mapping between COs of MCh PSU 4 and (POs & PSOs)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓



## **9 Dental Program**

### **9.1 Program Outcomes for BDS Program**

There are fifteen program outcomes (1-15) for the BDS program

- PO1. Describe normal and abnormal human structure, development, function and behavior that is relevant to the practice of Dentistry.
- PO2. Apply basic knowledge of biomedical, technical and clinical sciences for the effective practice of Dentistry.
- PO3. Elicit detailed Dental and relevant Medical history, perform an oral and general physical examination and choose relevant laboratory diagnostic tests for identification of oral disorders, prevention of oral disease and promotion of oral health.
- PO4. Demonstrate the ability to interpret available clinical and laboratory data and effective clinical problem solving, in order to generate differential diagnoses and to manage oral health disorders.
- PO5. Perform and interpret a basic oral radiological examination safely.
- PO6. Plan and administer, safely, appropriate treatments, including surgical procedures, for common oral disorders in adults as well as children.
- PO7. Identify and manage common medical emergencies encountered in general dental practice.
- PO8. Identify and refer patients who may require specialist care.
- PO9. Demonstrate knowledge of global and national needs, policies and regulatory frameworks relevant to oral health.
- PO10. Function effectively as an oral health care team member in health care settings.
- PO11. Communicate effectively and sensitively with patients, care-givers, colleagues and the public in a manner that will improve health care outcomes and patient / client satisfaction.
- PO12. Demonstrate the ability to continue refining existing knowledge / skills and acquire new knowledge/skills.
- PO13. Select and pursue an appropriate career pathway that is professionally rewarding and personally fulfilling.
- PO14. Recognize and manage medico-legal, ethical and professional issues in dental practice.
- PO15. Demonstrate and practice integrity, responsibility, respect and selflessness.

## **9.2 Program Outcomes for MDS Program**

### **9.2.1 CONSERVATIVE DENTISTRY AND ENDODONTICS**

- PO1. Students would be able to demonstrate understanding of basic sciences as relevant to conservative / restorative dentistry and Endodontics
- PO2. Students would demonstrate infection control measures in the dental clinical environment and laboratories
- PO3. Student would adopt ethical principles in all aspects of restorative and contemporary Endodontics including non-surgical and surgical Endodontics
- PO4. Students would be able to demonstrate communication skills in particular to explain various options available management and to obtain a true informed consent from the patient
- PO5. Students would be able to apply high moral and ethical standards while carrying on human or animal research.

### **9.2.2 ORAL PATHOLOGY AND MICROBIOLOGY**

- PO1. Apply the basic knowledge of both general and oral pathology in dealing with the nature of oral diseases, their causes, processes and effects.
- PO2. Perform routine histopathological evaluation of specimens relating to oral and perioral tissues, including principles of histochemistry, Immunochemistry, applied and theoretical biochemical basis of histochemistry.
- PO3. study and administer the routine diagnostic procedures including hematological, cytological, basic oral microbiology , Immunological and ultrastructural investigations.
- PO4. Demonstrate the current research methodology, collection and interpretation of data, the ability to carry out research projects on clinical and or epidemiological aspects.
- PO5. Write scientific papers and Update knowledge on current databases, automated data retrieval systems and referencing and present it in conferences both as poster and verbal presentations
- PO6. Recognize the pathology of oral tissues as well as the relation of local pathologic and clinical findings to systemic conditions and critically evaluate the oral and maxillofacial pathology literature.
- PO7. Describe the basics in Forensic Odontology and ability to apply it in medicolegal issues.

PO8. Interpret pathologic cellular change microscopically and group of diseases of similar histologic patterns in order to arrive at a differential diagnosis and ultimately to a final diagnosis.

### **9.2.3 ORAL MEDICINE & RADIOLOGY**

PO1. Demonstrate comprehensive knowledge of the applied anatomy of the face and oral cavity, the physiologic processes, pathologic processes and pharmacological applications.

PO2. Describe the etiopathogenesis, clinical and radiographic manifestations, investigations, differential diagnosis and management of oro-facial disorders, systemic diseases and maxillofacial trauma.

PO3. Discuss the dental considerations and management of medically compromised patients and patients with special needs.

PO4. Explain the clinical and radiographic features, investigations, differential diagnosis and management of various syndromes affecting the head and neck.

PO5. Discuss the evolution of radiology, physics, biologic effects, protection measures, principles and procedures of conventional and advanced imaging of the head and neck.

PO6. Outline the principles, clinical and radiographic aspects of Forensic odontology.

PO7. Demonstrate a working knowledge of the medico-legal aspects while handling patients in the dental clinic.

PO8. Diagnose, prevent and manage diseases affecting the oral and para-oral structures through established standard protocols by evaluation of the patient's dental and medical history, systemic examination and investigations.

### **9.2.4 ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS**

PO1. Effect of biologic processes and mechanical forces on the stomatognathic system throughout orthodontic treatment.

PO2. Gain an understanding of the etiology, pathophysiology, diagnosis and treatment planning of various common Malocclusion.

PO3. Become competent in Orthodontics prevention, interception and correction modalities.

PO4. Orthodontics relevant basic science knowledge gathering.

PO5. Become proficient about the interaction of social, cultural, economic, genetic and environmental factors related to management of oro-facial deformities.

- PO6. Elements influencing the long-range stability of orthodontic correction and their management.
- PO7. In depth understanding of personal hygiene, infection control, prevention of cross infection and safe disposal of hospital waste.

### **9.2.5 PAEDIATRIC AND PREVENTIVE DENTISTRY**

- PO1. Student should be able to know the growth pattern of maxilla and mandible and understand applied Anatomy, genetics, Applied Physiology, Applied Pathology, Nutrition, Dietics, Growth & Development, Cariology and Fluoride
- PO2. Student will get acquainted with Dental health concepts, Effects of civilization and environment, Dental Health delivery system, Public Health measures related to children along with principles of Pediatric Preventive Dentistry
- PO3. Student should be able develop an attitude of Counselling in Paediatric Dentistry and also be able to do Case History Recording, Outline of principles of examination, diagnosis & treatment planning.
- PO4. Student should be able to diagnose pediatric dental diseases and be competent to treat dental diseases which are occurring in child patient.
- PO5. Student should able to understand the principles of prevention and preventive dentistry right from birth to adolescence along with the ability to repair and restore the lost / tooth structure to maintain harmony between both hard and soft tissues of the oral cavity.
- PO6. Student should be able to manage the disabled children effectively and efficiently, tailored to the needs of individual requirement and conditions , acquire skills in managing efficiency life threatening condition with emphasis on basic life support measure and be able to treat children under sedation and general anesthesia.
- PO7. Student should able to develop an attitude to adopt ethical principles in all aspects of Paediatric dental practice along with professional honesty sharing knowledge and clinical experience with professional colleagues with own willingness and integrity also delivering care irrespective of the social status, cast, creed, and religion of the patient.
- PO8. Student should be able to create a good oral health in the child with Installing a positive attitude and behaviour in children , to guide and counsel the parents in regards to various treatment modalities including different facets of preventive dentistry. Student should also be able to respect child patient's rights and privileges, including child patient's right to information and right to seek a second opinion.
- PO9. For a given case, the student after a critical assessment should be able to adopt new methods and techniques of Paediatric dentistry that is developed time to time,

based on scientific researches, which are in the best interest of the child and patient also being able to put the knowledge learnt here to further his knowledge for higher studies.

### **9.2.6 PERIODONTICS AND ORAL IMPLANTOLOGY**

- PO1. Describe the biology and pathology of the periodontium as well as the principles of bone biology and wound healing.
- PO2. Collect, organize, analyze, interpret and present clinical data related to the examination of periodontal tissues and for implant placement.
- PO3. Utilize the appropriate diagnosing techniques relevant to periodontal and implant treatment and establish a prognosis for the outcomes of periodontal and implant treatments.
- PO4. Demonstrate competence in non-surgical and surgical management of periodontal defects, regenerative techniques, mucogingival procedures for normal and medically compromised patients. Also for managing medical emergencies in the dental clinic.
- PO5. Perform restoration driven implant placement based on the pre-operative planning. And, perform augmentation procedures prior to implant placement by using the appropriate material and techniques.
- PO6. Communicate effectively with other disciplines in treatment planning and in treatment sequencing.
- PO7. Teach in both didactic and clinical areas of undergraduate. Conduct, present and publish research projects based on national and global needs.
- PO8. Demonstrate appropriate professional attitudes and behaviour in dealing with staff members and helping personnel. Converse with patients in an attentive manner that conveys concern, compassion, and the moral support of patients or their families.

### **9.2.7 PUBLIC HEALTH DENTISTRY**

- PO1. Elicit detailed Dental and relevant Medical history, perform an oral and general physical examination and choose relevant laboratory diagnostic tests for identification of oral disorders, prevention of oral disease and promotion of oral health.
- PO2. Demonstrate the ability to conduct oral health surveys, record history, and carry out clinical examination including all diagnostic procedure to arrive at diagnosis at the individual level and conduct survey of the community at state and national level of all conditions related to oral health to arrive at community diagnosis

- PO3. Identify social, economic, environmental and emotional determinants in a given individual patient or a community for the purpose of planning and execution of Community Oral Health Program as well as develop the planning, implementation, evaluation and administrative skills to carry out successful community
- PO4. Demonstrate knowledge of global and national needs, policies and regulatory frameworks relevant to oral health.
- PO5. Function effectively as an oral health care team member in health care settings.
- PO6. Communicate effectively and sensitively with patients, care-givers, colleagues and the public in a manner that will improve health care outcomes and patient / client satisfaction.
- PO7. Teach in both didactic and clinical areas of undergraduate. Conduct, present and publish research projects based on national and global needs.
- PO8. Recognize and manage medico-legal, ethical and professional issues in dental practice.

### **9.2.8 PROSTHODONTICS AND CROWN & BRIDGE**

- PO1. The candidate should be able to examine the patients requiring Prosthodontic therapy, investigate the patient systemically, analyse the investigation results, radiographs, diagnose the ailment, plan the treatment, communicate it with the patient and execute it.
- PO2. To understand the prevalence and prevention of diseases of craniomandibular system related to prosthetic dentistry.
- PO3. The candidate should be able to restore lost functions of stomatognathic system like mastication, speech, appearance and psychological comforts by understanding biological, biomedical, bioengineering principles and systemic conditions of the patients to provide quality health care in the craniofacial regions.
- PO4. The candidate should be able to demonstrate good interpersonal, communication skills and team approach in interdisciplinary care by interacting with other specialties including medical specialty for planned team management of patients for craniofacial & oral acquired and congenital defects, temporomandibular joint syndromes, esthetics, Implant supported Prosthetics and problems of Psychogenic origins. To identify target diseases and create awareness amongst the population regarding Prosthodontic therapy.
- PO5. Should be able to demonstrate the clinical competence necessary to carry out appropriate treatment at higher level of knowledge, training and practice skills currently available in their specialty area with a patient centered approach. Should be able to interpret various radiographs like IOPA, OPG, CBCT and CT. Should and be able to plan and modify treatment plan based on radiographic findings.

- PO6. Should be able to critically appraise articles published and understand various components of different types of articles and be able to gather the weight of evidence from the same. Explore the applications of ICT to simplify prosthodontic treatment and to carry out material science research based on patient needs
- PO7. To perform Clinical and Laboratory procedures with a clear understanding of biomaterials, tissue conditions related to prosthesis and have required dexterity & skill for performing clinical and laboratory all procedures in fixed, removable, implant, maxillofacial, TMJ and esthetics Prosthodontics.
- PO8. To carry out necessary adjunctive procedures to prepare the patient before prosthesis like tissue preparation and preprosthetic surgery and to prepare the patient before prosthesis / prosthetic procedures.

### **9.2.9 ORAL AND MAXILLOFACIAL SURGERY**

- PO1. Practice with apt knowledge and understanding of etiology, pathophysiology and diagnosis, appropriate treatment planning of various oral and maxillofacial surgical problems.
- PO2. Manage and treat minor oral surgical procedures and common maxillofacial surgery both surgically and medically with competence (if required multispecialty approach).
- PO3. Apply basic sciences and general surgical principles to pre and post-surgical management particularly evaluation, post-surgical care, fluids and electrolyte management, blood transfusion and post-surgical pain, management.
- PO4. Maintain personal hygiene and infection control, prevention of cross infection and safe disposal of hospital waste keeping in view of the high prevalence of hepatitis, HIV and other transmissible diseases.
- PO5. Develop an attitude to seek an opinion from allied medical and dental specialists as and when required and be willing to share knowledge and clinical experience with professional colleagues.
- PO6. Adopt new techniques of surgical management developed from time to time, be well aware with all recent advances pertaining to oral and maxillofacial surgeries.
- PO7. Communicate with patients and Provide compassionate patient care to patients from diverse backgrounds including the ability to listen to, respond to, and provide appropriate information and obtaining a truly informed consent .
- PO8. Developing interest in research or critical appraisal of research literature which are in the best interest of the patient.

## 9.3 Mapping of CO Vs POs

### 9.3.1 BDS

Table 1036: Mapping between COs of ‘Human Anatomy’ and POs

Course Outcomes	Human Anatomy														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Describe the normal disposition, functional and cross-sectional anatomy of various structures in the head and neck	✓									✓	✓	✓			
CO2:Explain the microscopic structure of various tissues and organs related to head and neck	✓				✓	✓	✓	✓	✓						
CO3:Describe the principles and sequential development of the organs and systems related to head and neck	✓	✓			✓	✓	✓	✓	✓						
CO4:Describe the appearance of normal skiagrams of head and neck region	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO5:Identify the various structures of the head and neck region	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
CO6:Identify the basic tissues of the body and organs related to head and neck under the microscope	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
CO7:Identify the features of normal skiagrams of head and neck region	✓		✓							✓	✓	✓	✓	✓	✓
CO8:Demonstrate the topography of various structures of head and neck on the surface of the body	✓			✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
CO9:Identify the embryology models	✓			✓	✓	✓	✓								



Table 1037: Mapping between COs of 'Human Biochemistry' and POs

Human Biochemistry															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Enlist and describe the cell organelles with their molecular and functional organization	✓									✓	✓	✓			
CO2:Delineate structure, function and interrelationships of various biomolecules and consequences of deviation from the normal	✓			✓	✓	✓	✓	✓	✓						
CO3:Understand basic enzymology and emphasize on its clinical applications where in regulation of enzymatic activity is disturbed	✓	✓		✓	✓		✓	✓	✓		✓	✓			
CO4:Describe digestion and assimilation of nutrients and consequence of malnutrition	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	
CO5:Describe and integrate metabolic pathways of various biomolecules with their regulatory mechanisms	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
CO6:Explain the biochemical basis of inherited disorders with their associated sequelae	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
CO7:Describe mechanisms involved in maintenance of water, electrolyte and acid base balance and consequences of their imbalances	✓		✓	✓	✓					✓	✓	✓	✓	✓	✓
CO8:Outline the molecular mechanisms of gene expression and regulation, basic principles of biotechnology and their applications in medicine	✓			✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
CO9:Understand the basic immunology involving molecular concepts of body defence mechanisms and their applications in medicine	✓			✓	✓	✓	✓								
CO10:Continue to learn advancements in biochemistry and apply the same in medical practice		✓	✓	✓		✓	✓	✓	✓	✓	✓			✓	✓
CO11:Understand different types of Bio –medical waste, their potential risks and their mana						✓	✓	✓	✓	✓	✓			✓	✓

Table 1038: Mapping between COs of 'Human Physiology' and POs

Human Physiology															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1: Explain the normal functioning of organ systems	✓									✓	✓	✓			
CO2: Describe the interrelationships and interactions among various organs and systems for maintaining Homeostasis	✓			✓	✓	✓	✓	✓	✓						
CO3: Assess the relative contribution of each organ systems towards the maintenance of constant internal environment	✓	✓		✓	✓		✓	✓	✓		✓	✓			
CO4: Differentiate between normal and abnormal functioning of organs and systems	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	
CO5: Explain the physiological basis of pathogenesis and treatment of diseases and disorders	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
CO6: Apply the physiological basis in the practice of dentistry	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
CO7: Perform experiments designed for the better understanding of physiological phenomenon	✓		✓	✓	✓					✓	✓	✓	✓	✓	✓
CO8: Interpret experimental and investigative data	✓			✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
CO9: Distinguish between normal and abnormal data derived during the practicals or observed at the laboratory	✓			✓	✓	✓	✓								
CO10: Apply ethical behavior to professional practice		✓	✓	✓		✓	✓	✓	✓	✓	✓			✓	✓
CO11: Apply effective communication skills while interacting with patients						✓	✓	✓	✓	✓	✓			✓	✓

Table 1039: Mapping between COs of ‘Dental anatomy, embryology and oral histology’ and POs

Dental anatomy, embryology and oral histology															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:After a course on Dental Anatomy including Embryology and Oral Histology	✓									✓	✓	✓			
CO2:The student shall know the normal development, morphology, structure & functions of oral tissues & variations in different pathological/non- pathological states	✓			✓	✓	✓	✓	✓	✓						
CO3:The student should understand the histological basis of various dental treatment procedures and physiologic ageing process in the dental tissues	✓	✓		✓	✓		✓	✓	✓		✓	✓			
CO4:The students must know the basic knowledge of various research methodologies							✓								
CO5:The student should acquire basic skills in						✓	✓								✓
CO6:Carving of crowns of permanent teeth in wax						✓	✓								✓
CO7:Microscopic study of Oral tissues															✓
CO8:Identification of Deciduous & Permanent teeth	✓			✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
CO9:Age estimation by patterns of teeth eruption from plaster casts of different age groups	✓			✓	✓	✓	✓								

Table 1040: Mapping between COs of ‘General and dental pharmacology & therapeutics’ and POs

MEL1002:STATICS															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:At the end of the course the student shall be able to:	✓		✓	✓	✓					✓	✓	✓			
CO2:Describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs in general and in dentistry in particular	✓		✓	✓	✓	✓	✓	✓	✓						
CO3>List the indications, contraindications; interactions, and adverse reactions of commonly used drugs with reason.	✓	✓	✓	✓	✓	✓	✓	✓	✓						
CO4:Tailor the use of appropriate drugs in disease with consideration to its cost, efficacy, and safety for individual and mass therapy needs.	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO5:Indicate special care in prescribing common and essential drugs in special medical situations such as pregnancy, lactation, old age, renal, hepatic damage and immuno compromised patients	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO6:Integrate the rational drug therapy in clinical pharmacology	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO7:Indicate the principles underlying the concepts of “Essential drugs”.	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO8:Prescribe drugs for common dental and medical ailments	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO9:To appreciate adverse reactions and drug interactions of commonly used drugs.	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
CO10:Observe experiments designed for study of effects of drugs.			✓	✓	✓										
CO11:Critically evaluate drug formulations and be able to interpret the clinical pharmacology of marketed preparations commonly used in dentistry.							✓	✓	✓	✓	✓	✓	✓		

Table 1041: Mapping between COs of 'General Pathology' and POs

General Pathology															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:At the end of the course the student should be competent to	✓		✓	✓	✓					✓	✓	✓			
CO2:Apply the scientific study of disease processes, which result in morphological and functional alterations in cells, tissues and organs to the study of pathology and the practice of dentistry	✓		✓	✓	✓	✓	✓	✓	✓						
CO3:To demonstrate and apply basic facts, concepts and theories in the field of Pathology	✓	✓	✓	✓	✓	✓	✓	✓	✓						
CO4:To recognize and analyze pathological changes at macroscopically and microscopical levels and explain their observations in terms of disease processes.	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO5:To integrate knowledge from the basic sciences, clinical medicine and dentistry in the study of Pathology	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO6:To demonstrate understanding of the capabilities and limitations of morphological Pathology in its contribution to medicine, dentistry and biological research	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO7:To demonstrate ability to consult resource materials outside lectures, laboratory and tutorial classes	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1042: Mapping between COs of 'MICROBIOLOGY' and POs

MICROBIOLOGY															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Describe the normal homeostatic mechanisms and the pathological process in their derangement and the effects on human systems.	✓		✓	✓	✓					✓	✓	✓			
CO2:Discuss the concepts of cell injury and pathological and immunological responses produced thereby in different tissues and organs and the body's capacity for healing.	✓		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		
CO3:Demonstrate basic Knowledge and understanding of the immune system in health and disease.	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO4:Explain the etiology, pathogenesis, pathological effects and clinicopathological correlation of common infectious and non-infectious diseases	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO5:Describe the concept of hemodynamic disorders, thromboembolic disease and shock and their clinical application	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
CO6:Describe the concept of neoplasia with reference to the etiology, morphological features, diagnosis and prognosis in different tissues and organs of the body.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO7:Discuss the epidemiology, gross and microscopic features, clinical presentation and diagnostic techniques associated with different diseases in different organ systems to the extent needed for the understanding of disease processes and their clinical significance.		✓	✓	✓		✓			✓	✓	✓	✓	✓		✓
CO8:Recognise and interpret the common hematological disorders and the investigations, blood banking as well as cytological procedures	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO9:Perform and interpret the basic bed-side clinical pathology procedures on blood and urine samples.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO10:Have a sound understanding of various infectious diseases and lesions in the oral cavity	✓	✓		✓	✓	✓	✓	✓			✓	✓	✓	✓	

Table 1043: Mapping between COs of 'Dental Materials' and POs

Dental Materials															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Adequate knowledge of the scientific foundations on which dentistry is based and good understanding of various relevant scientific methods, principles of biological functions and be able to evaluate and analyze scientifically various established facts and data	✓		✓	✓	✓					✓	✓	✓			
CO2:To understand the evolution and development of science of dental material. the composition, properties, manipulative techniques and their various commercial names. The student should also acquire skills to select and use the materials appropriately for laboratory and clinical use	✓		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		
CO3:To explain purpose of course in dental materials to personnel concerned with the profession of the dentistry	✓	✓	✓						✓		✓	✓	✓	✓	
CO4:Knowledge of physical and chemical properties	✓	✓	✓						✓		✓	✓	✓	✓	
CO5:Knowledge of biomechanical requirements of particular restorative procedure. Search for newer and better materials which may answer our requirements with greater satisfaction	✓	✓	✓						✓	✓	✓		✓	✓	✓
CO6:To understand and evaluate the claims made by manufactures of dental materials	✓	✓	✓						✓	✓	✓	✓	✓	✓	✓
CO7:To exercise his/her best skills through knowledge of properties of different types of materials	✓	✓	✓	✓	✓	✓						✓	✓		✓
CO8:To understand the allergic or toxic reactions of dental materials on oral tissues and methods to manage them		✓	✓	✓	✓	✓						✓		✓	✓
CO9:To help and participate in the implementation of the national oral health policy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO10:Competent in the control of pain and anxiety among the patients during dental treatment	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	

Table 1044: Mapping between COs of ‘General Medicine’ and POs

General Medicine															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Able to record the arterial pulse, blood pressure & be capable of suspecting by sight and superficial examination of body: diseases of the heart, lungs, kidneys, blood etc.	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO2:Capable of handling medical emergencies encountered in dental practice.	✓		✓	✓	✓		✓		✓	✓		✓	✓	✓	✓
CO3:Have knowledge of Special precautions/contraindication of anesthesia and various dental procedures in different systemic diseases.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Acquire knowledge about Oral manifestations of systemic diseases.	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
CO5:Able to take history, do general physical examination (including build, nourishment, pulse, BP, respiration, clubbing, cyanosis, jaundice, lymphadenopathy, oral cavity) and be able to examine CVS, RS and abdomen and facial nerve.	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓
CO6:Possess skill to carry out certain investigative procedures and ability to interpret laboratory findings	✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1045: Mapping between COs of ‘General Surgery’ and POs

General Surgery															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:To acquaint with various diseases, which may require surgical expertise	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO2:To train the student to analyze the history and be able to do a thorough physical examination of the patient	✓		✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓
CO3:Have a good theoretical knowledge of various ailments	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓
CO4:Be practically trained to differentiate benign and malignant diseases	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
CO5:Be able to decide which patient requires further evaluation	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓



Table 1046: Mapping between COs of ‘Oral Pathology & Microbiology’ and POs

Oral Pathology & Microbiology															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:At the end of Oral Pathology & Oral Microbiology course, the student should be able to comprehend	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
CO2:The different types of pathological processes, that involve the oral cavity.	✓		✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓
CO3:The manifestations of common diseases, their diagnosis & correlation with clinical pathological processes	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO4:An understanding of the oral manifestations of systemic diseases should help in correlating with the systemic physical signs & laboratory findings.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
CO5:The student should understand the underlying biological principles governing treatment of oral diseases.	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO6:The principles of certain basic aspects of Forensic Odontology.	✓	✓				✓	✓	✓	✓	✓		✓	✓	✓	✓

Table 1047: Mapping between COs of ‘Oral Medicine and Radiology’ and POs

Oral Medicine and Radiology															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:To diagnose the common disorders of Orofacial region by clinical examination and with the help of such investigations as may be required and medical management of oro-facial disorders with drugs and physical agents.		✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓
CO2:To understand the importance, role, use and techniques of radiographs/digital radiograph and other imaging methods in diagnosis.	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓
CO3:To gain knowledge about the principles of the clinical and radiographic aspects of Forensic Odontology	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓

Table 1048: Mapping between COs of ‘Orthodontics & Dentofacial orthopedics’ and POs

Orthodontics & Dentofacial orthopedics															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Able to diagnose, analyses and treat common orthodontic problems by preventive, interceptive and corrective orthodontic procedures.	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓
CO2:Able to fabricate basic appliances in orthodontic procedures	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓

Table 1049: Mapping between COs of Pediatric & Preventive dentistry and POs

Pediatric & Preventive dentistry															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Understand the growth and development of orofacial structures including dentition Acquire knowledge and skill to handle pediatric dental patients Develop the skill to diagnose dental problems in pediatric patients	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓
CO2:Gain expertise in imparting treatment to pediatric patients with dental problems	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓
CO3:Have basic knowledge about child psychology and its application in managing dental pediatric patients	✓	✓		✓	✓	✓	✓		✓	✓	✓		✓	✓	✓

Table 1050: Mapping between COs of ‘Prosthodontics and crown & bridge’ and POs

Prosthodontics and crown & bridge															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:At the end of the course, the student is expected to:	✓		✓		✓	✓		✓	✓		✓	✓		✓	✓
CO2:Acquire knowledge to diagnose the prosthodontic needs of the patients		✓	✓	✓		✓	✓		✓	✓		✓	✓	✓	✓
CO3:Gain skill and expertise to fabricate complete and removable partial dentures for the patient rehabilitation	✓		✓	✓	✓		✓	✓		✓	✓	✓	✓	✓	
CO4:Basic knowledge about fixed prosthodontics		✓		✓		✓			✓	✓	✓		✓		✓
CO5:Attain knowledge about implants in prosthodontics	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓

Table 1051: Mapping between COs of ‘Public health dentistry’ and POs

Public health dentistry															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Have a knowledge of the basis of public health, preventive dentistry, public health problems in India,	✓	✓	✓	✓		✓	✓		✓	✓				✓	✓
CO2:Nutrition, Environment and their role in health, basics of dental statistics, epidemiological methods,	✓		✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	
CO3:National oral health policy with emphasis on oral health policy.	✓	✓		✓		✓	✓	✓		✓		✓		✓	✓
CO4:Understand the community aspects of dentistry		✓		✓	✓		✓	✓	✓		✓		✓	✓	✓
CO5:To take up leadership role in solving community oral health programme	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓			
CO6:Acquire skill of identifying health problems affecting the society, conducting health surveys, conducting health education classes and deciding health strategies.		✓	✓	✓		✓	✓	✓		✓			✓	✓	
CO7:Students should develop a positive attitude towards the problems of the society and must take responsibilities in providing health.	✓		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓
CO8:Able to communicate the needs of the community efficiently, inform the society of all the recent methodologies in preventing oral disease	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓		✓

Table 1052: Mapping between COs of ‘Conservative Dentistry and Endodontics’ and POs

Conservative Dentistry and Endodontics															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:The graduate should acquire the following knowledge during the period of training	✓	✓	✓		✓	✓	✓		✓	✓		✓		✓	✓
CO2:To diagnose and treat simple restorative work for teeth.		✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓
CO3:To gain knowledge about aesthetic restorative material and to translate the same to patient’s needs.	✓	✓		✓	✓	✓		✓	✓		✓	✓	✓		✓
CO4:To gain the knowledge about endodontic treatment on the basis of scientific foundation.	✓		✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	
CO5:To carry out simple endodontic treatment	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓		✓
CO6:To carry out simple luxation of tooth and its treatment and to provide emergency endodontic treatment.	✓	✓	✓	✓	✓	✓	✓	✓						✓	✓
CO7:Learn the skills to use medium and high speed hand pieces to carry out restorative work.		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO8:Acquire the skills to use and familiarize endodontic instruments and materials needed for carrying out simple endodontic treatment.	✓	✓	✓	✓		✓			✓	✓	✓	✓	✓	✓	
CO9:To achieve the skills to translate patients esthetic needs along with function.	✓	✓	✓		✓	✓	✓	✓			✓	✓	✓	✓	✓
CO10:To motivate the patient for proper dental treatment at the same time proper maintenance of oral hygiene should be emphasize which will help to maintain the restorative work and prevent future damage.	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1053: Mapping between COs of 'Forensic Odontology' and POs

Forensic Odontology															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Have sound knowledge of the theoretical and practical aspects of forensic odontology.	✓		✓	✓		✓	✓		✓	✓		✓	✓	✓	✓
CO2:Have and awareness of ethical obligations and legal responsibilities in routine practice and forensic casework.	✓		✓		✓	✓	✓	✓		✓	✓		✓	✓	✓
CO3:Be competent to recognize forensic cases with dental applications when consulted by the police, forensic pathologists, lawyers and associated professionals.			✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	
CO4:Be competent in proper collection, age estimation and bite marks.	✓	✓		✓			✓	✓	✓	✓		✓	✓		✓
CO5:Be able to assist in analysis, evaluation, and presentation of dental facts within the realm of law.	✓	✓	✓		✓		✓	✓	✓		✓	✓		✓	✓

Table 1054: Mapping between COs of 'Ethics' and POs

Ethics															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:Practice the specialty efficiently and effectively, backed by scientific knowledge and skill.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Exercise empathy and a caring attitude and maintain high ethical standards.	✓	✓	✓				✓	✓						✓	✓
CO3:Continue to demonstrate keen interest in continuing professional education in the specialty and allied specialties irrespective of whether in teaching or practice	✓	✓	✓												
CO4:Willing to share the knowledge and skills with any learner, junior or a colleague.	✓	✓	✓												
CO5:Develop the faculty for critical analysis and evaluation of various concepts and views, to adopt the most rational approach.	✓	✓	✓	✓											

Table 1055: Mapping between COs of ‘Oral and maxillofacial surgery’ and POs

Oral and maxillofacial surgery															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1:To produce a graduate who is competent in performing extraction of teeth under both local and general anaesthesia, prevent and manage related complications, acquire a reasonable knowledge and understanding of the various diseases, injuries, infections occurring in the Oral & Maxillofacial region and offer solutions to such of those common conditions and has an exposure in to the in-patient management of maxillofacial problems.	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO2:At the end of the course and the clinical training the graduate is expected to - Able to apply the knowledge gained in the related medical subjects like pathology, microbiology and general medicine in the management of patients with oral surgical problem.	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	
CO3:Able to diagnose, manage and treat (understand the principles of treatment of) patients with oral surgical problems.	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓
CO4:Knowledge of range of surgical treatments.		✓	✓	✓	✓		✓	✓	✓		✓		✓	✓	✓
CO5:Ability to decide the requirement of a patient to have oral surgical specialist opinion or treatment	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓		✓	✓
CO6:Understand the principles of in-patient management	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
CO7:Understanding of the management of major oral surgical procedures and principles involved in patient management.	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO8:Should know ethical issues and communication ability.	✓	✓		✓	✓		✓	✓	✓	✓	✓		✓	✓	

Table 1056: Mapping between COs of ‘Periodontology’ and POs

Periodontology															
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1: The student shall acquire the skill to perform dental scaling, diagnostic tests of periodontal diseases; to use the instruments for periodontal therapy and maintenance of the same.	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓		✓	✓
CO2: The student shall develop attitude to impart the preventive measures namely, the prevention of periodontal diseases and prevention of the progress of the disease.	✓		✓	✓	✓	✓	✓		✓	✓		✓	✓		✓
CO3: The student shall also develop an attitude to perform the treatment with full aseptic precautions; shall develop an attitude to prevent iatrogenic diseases;	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	
CO4: Counsel patients to conserve the tooth to the maximum possible time by maintaining periodontal health and to refer the patients who require specialist's care.	✓		✓	✓	✓		✓	✓			✓	✓		✓	✓

### 9.3.2 MDS: CONSERVATIVE DENTISTRY AND ENDODONTICS

Table 1057: Mapping between Course Outcomes of ‘CONS-ENDO - Part I – Applied Basic Sciences’ and POs

CONS-ENDO - Part I – Applied Basic Sciences											
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	
CO1: Students would be able to demonstrate understanding of basic sciences as relevant to conservative / restorative dentistry and Endodontics	✓										
CO2: Students would demonstrate infection control measures in the dental clinical environment and laboratories.	✓										
CO3: Student would adopt ethical principles in all aspects of restorative and contemporary Endodontics including non-surgical and surgical Endodontics			✓								
CO4: Students would be able to demonstrate communication skills in particular to explain various options available management and to obtain a true informed consent from the patient		✓	✓		✓						
CO5: Students would be able to apply high moral and ethical standards while carrying on human or animal research.					✓						

Table 1058: Mapping between Course Outcomes of 'CONS-ENDO - Part II -Paper I –Conservative Dentistry' and POs

CONS-ENDO - Part II -Paper I –Conservative Dentistry										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Students would be able to describe aetiology, pathophysiology, diagnosis and management of common restorative situations, that will include contemporary management of dental caries, non-carious lesions and hypersensitivity.	✓	✓	✓							
CO2: Students would be able to take proper chair side history, examine the patient and perform medical and dental diagnostic procedures; as well as perform relevant tests and interpret them to come to a reasonable diagnosis about the dental condition	✓	✓	✓							
CO3: Perform all levels of restorative work including Aesthetic procedures and treatment of complicated restorative procedures.	✓	✓	✓							

Table 1059: Mapping between Course Outcomes of 'CONS-ENDO - Part II -Paper III Descriptive Analyzing Type Question' and POs

CONS-ENDO - Part II -Paper III Descriptive Analyzing Type Question										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Students would diagnose , plan and execute challenging clinical cases requiring comprehensive management strategies using contemporary materials and techniques in the specialty of conservative dentistry and endodontics		✓	✓		✓					
CO2 Should be able to analyze various clinical scenarios and apply their knowledge accordingly.				✓	✓					



Table 1060: Mapping between Course Outcomes of 'CONS-ENDO - Part II -Paper II - Endodontics' and POs

CONS-ENDO - Part II -Paper II - Endodontics										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Students would be able to describe aetiology, pathophysiology, periapical diagnosis and management of common endodontic situations that will include contemporary management of trauma and pulpal pathoses including endo-periodontal.		✓		✓						
CO2: Students would be able to master differential diagnosis and recognize conditions that may require multidisciplinary approach or a clinical situation outside the realm of the specialty, which he or she should be able to recognize and refer to appropriate specialist	✓	✓	✓							
CO3: Students would undertake complete patient monitoring including preoperative as well as post operative care of the patient.										
CO4: Students would perform all levels of surgical and non -surgical Endodontics including endodontic endosseous implants,retreatment as well as endodontic -periodontal surgical procedures as part of multidisciplinary approach to clinical condition			✓							
CO5: Students would be able to manage acute pulpal and pulpo periodontal situations.										

### 9.3.3 MDS:ORAL PATHOLOGY AND MICROBIOLOGY

Table 1061: Mapping between Course Outcomes of 'ORAL PATH - Part I - Applied basic sciences' and POs

ORAL PATH - Part I - Applied basic sciences										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Should have a broad overview of the current research and methods used in studying problems in dental anatomy and histology.	✓	✓	✓							
CO2: Knowledge of the regional anatomy, histology, embryology and osteology of head and neck with general disposition of thorax, abdominal and pelvic organs and translating this knowledge in the specialty related diagnosis	✓	✓	✓							
CO3: Should have an understanding of the clinical and biological factors to be considered in the appropriate use of antimicrobial drugs and its pharmacokinetics.	✓	✓	✓							
CO4: Be aware of the contemporary principles and practices of microbiological laboratory diagnostic techniques and interpretation of laboratory reports.		✓	✓			✓				
CO5: Basic knowledge about medical genetics and emphasis on topics of dental importance	✓	✓	✓							
CO6: Should have a basic knowledge on research methodology, biostatistics and be able to apply it in various research projects as well as dissertations.				✓	✓					

Table 1062: Mapping between Course Outcomes of 'ORAL PATH - Part II -Paper I - Oral pathology and microbiology' and POs

ORAL PATH - Part II -Paper I -Oral pathology and microbiology										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Knowledge and skill to identify and diagnose basic diseases and lesions affecting oral tissues through microscopic slides.	✓	✓	✓							
CO2: Knowledge of clinical, radiologic and pathologic features of oral diseases facilitating their diagnosis.	✓	✓	✓			✓				
CO3: Knowledge of principles of certain basic aspects of forensic odontology.							✓			
CO4: Skill of diagnosing basic hematological abnormalities through interpretation of peripheral smear.			✓	✓		✓				

Table 1063: Mapping between Course Outcomes of 'ORAL PATH - Part II -Paper II - Laboratory Diagnosis' and POs

ORAL PATH - Part II -Paper II - Laboratory Diagnosis										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Knowledge and skill development on the various laboratory procedures like Basic knowledge and skill of preparation of paraffin embedded sections of human oral biopsied tissue.		✓	✓			✓				
CO2: Basic knowledge of laboratory chemicals, equipments. and skill of preparation of paraffin embedded sections of human oral biopsied tissue	✓	✓				✓				
CO3: Knowledge on special stain techniques and their applications in diagnosis of oral diseases		✓	✓			✓		✓		

Table 1064: Mapping between Course Outcomes of 'ORAL PATH - Part II -Paper III -Essay' and POs

ORAL PATH - Part II -Paper III -Essay										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Should have a broad overview of the current research and methods used in studying problems in oral pathology.				✓	✓					
CO2: Be aware of the contemporary principles and practices of microbiological and histological laboratory diagnostic techniques and interpretation of laboratory reports.		✓	✓			✓		✓		
CO3: Knowledge about various oral pathological diseases and it's genetics and emphasis on topics of dental importance.		✓	✓			✓				
CO4: Should have an overall knowledge on research methodology, biostatistics and be able to apply it in various research projects as well as dissertations.				✓	✓					
CO5: Knowledge on special stain techniques and their application in diagnosis of oral diseases			✓			✓				
CO6: Overall student should have comprehensive knowledge on oral and paraoral structures and related pathologies.		✓			✓	✓				

### 9.3.4 MDS:ORAL MEDICINE & RADIOLOGY

Table 1065: Mapping between Course Outcomes of 'OMR - Part I -Basic applied science' and POs

OMR - Part I -Basic applied science										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: The student would demonstrate sound theoretical knowledge and understanding of basic relevant sciences namely, the applied anatomy of the face and oral cavity, the basic physiologic processes, pathologic processes and the basics of pharmacologic applications	✓		✓		✓			✓		
CO2: The student would be proficient in physical examination of the patient, identification of normal and abnormal functioning of the various systems of the body.		✓					✓			
CO3: Should have an understanding of the broad range of infection diseases affecting the oral cavity.	✓		✓		✓					
CO4: should have an understanding the clinical and biological factors to be considered in the appropriate use of antimicrobial drugs	✓		✓		✓			✓		
CO5: Knowledge on special stain techniques and their application in diagnosis of oral diseases		✓					✓			

Table 1066: Mapping between Course Outcomes of 'OMR - Part II -Paper I -Diagnosis, diagnostic methods and imageology and Applied Oral Pathology' and POs

OMR - Part II -Paper I -Diagnosis, diagnostic methods and imageology and Applied Oral Pathology										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: The student would possess ample understanding and knowledge of diagnosis and diagnostic methods, ionizing radiation, its applications in dentistry and its limitations.	✓		✓	✓		✓	✓			
CO2: The student would be proficient in detailed physical examination of the oral and para oral structures, identification of pathologies and techniques involved in conventional and advanced diagnostic radiographic examination.		✓			✓			✓		
CO3: Apply high moral and ethical standards while carrying out clinical and radiographic examinations	✓		✓	✓			✓			

Table 1067: Mapping between Course Outcomes of 'OMR - Part II -Paper II -Oral medicine, Therapeutics and Laboratory investigations' and POs

OMR - Part II -Paper II -Oral medicine, Therapeutics and Laboratory investigations										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: The student would be proficient in describing the etiology, pathophysiology, principles of diagnosis and management of common oro facial disorders.	✓		✓			✓	✓			
CO2: The student would be proficient in formulating a differential diagnosis and investigations plan and frame the treatment strategy.		✓			✓			✓		
CO3: The student would develop communication skills and ability to explain the disease process to the patient and to obtain a informed consent from the patient	✓		✓				✓			

Table 1068: Mapping between Course Outcomes of 'OMR - Part II -Paper III -Essay' and POs

OMR - Part II -Paper III -Essay										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Knowledge and skill development on the various laboratory procedures like Basic knowledge and skill of preparation of paraffin embedded sections of human oral biopsied tissue.	✓		✓	✓		✓	✓			
CO2: Basic knowledge of laboratory chemicals, equipments. and skill of preparation of paraffin embedded sections of human oral biopsied tissue		✓			✓			✓		
CO3: Knowledge on special stain techniques and their applications in diagnosis of oral diseases	✓		✓	✓			✓			

### 9.3.5 MDS:ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS

Table 1069: Mapping between Course Outcomes of 'ORTHO - Part I - Applied Basic Sciences' and POs

ORTHO - Part I - Applied Basic Sciences										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Applied Anatomy: Under anatomy they would have learnt about Prenatal and post natal growth of head, bone growth, assessment of growth and development, muscles of mastication, Development of dentition and occlusion.	✓	✓	✓	✓		✓				
CO2: Applied Physiology: Under Physiology they would have learnt about Endocrinology and its disorders, Calcium and its metabolism, Nutrition-metabolism and their disorders, Muscle physiology, cranio-facial biology, bleeding disorders.		✓		✓	✓					
CO3: Dental Materials: Under Dental Materials they would have learnt about Gypsum products, impression materials, acrylics, composites, banding and bonding cements, wrought metal alloys, orthodontic arch wires, elastics, applied physics, specification and tests methods, survey of all contemporary and recent advances of above.	✓		✓	✓		✓				
CO4: Genetics: Under Genetics they would have learnt about Cell structure, DNA, RNA, protein synthesis, cell division, Chromosomal abnormalities, Principles of orofacial genetics, Genetics in malocclusion, Molecular basis of genetics, Studies related to malocclusion, Recent advances in genetics related to malocclusion, Genetic counselling, Bioethics and relationship to Orthodontic management of patients	✓	✓	✓	✓	✓	✓	✓			
CO5: Physical Anthropology: Under Physical Anthropology they would have learnt about Evolutionary development of dentition, Evolutionary development of jaws	✓	✓		✓		✓				
CO6: Pathology: Under Pathology they would have learnt about inflammation, and necrosis			✓	✓	✓	✓	✓			
CO7:Biostatistics: Under Biostatistics they would have learnt about Statistical principles Sampling and Sampling technique, Experimental models, design and interpretation, Development of skills for preparing clear concise and cogent scientific abstracts and Publication.	✓	✓	✓	✓			✓			
CO8: Applied research methodology in Orthodontics: Under Applied research methodology in Orthodontics they would have learnt about Experimental design, Animal experimental protocol, Principles in the development, execution and interpretation of methodologies in Orthodontics, Critical Scientific appraisal of literature.	✓	✓		✓	✓	✓	✓			



Table 1070: Mapping between Course Outcomes of 'ORTHO - Part II -Paper I - Basic Orthodontics' and POs

ORTHO - Part II -Paper I - Basic Orthodontics										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Orthodontic history: Under Orthodontic History they would have learnt about Historical perspective, Evolution of orthodontic appliances, Pencil sketch history of Orthodontic peers, History of Orthodontics in India.	✓	✓	✓	✓		✓	✓			
CO2: Concepts of occlusion and esthetics: Under this, the students would learn about Structure and function of all anatomic components of occlusion, Mechanics of articulation, Recording of masticatory function, Diagnosis of Occlusal dysfunction, Relationship of TMJ anatomy and pathology and related neuromuscular physiology.		✓	✓		✓	✓				
CO3: Etiology and Classification of malocclusion: Under this, the students would learn about, a comprehensive review of the local and systemic factors in the causation of Malocclusion and Various classifications of malocclusion.	✓	✓	✓	✓		✓	✓			
CO4: Dentofacial Anomalies: Under this, the students would learn about, anatomical, physiological and pathological characteristics of major groups of developmental defects of the orofacial structures.	✓	✓		✓	✓					
CO5: Child and Adult Psychology: Under this, the students would learn about Stages of child development, Theories of psychological development, Management of child in orthodontic treatment, Management of handicapped child, Motivation and Psychological problems related to malocclusion / orthodontics, Adolescent psychology, Behavioral psychology and communication.	✓		✓	✓	✓	✓	✓			
CO6: Diagnostic procedures and treatment planning in orthodontics: Under this, the students would learn about Stages of child development, Theories of psychological development, Management of child in orthodontic treatment, Management of handicapped child, Motivation and Psychological problems related to malocclusion / orthodontics, Adolescent psychology, Behavioral psychology and communication.	✓	✓		✓	✓	✓				
CO7: Cephalometrics: Under this the student would learn about, Instrumentation, Image processing, Tracing and analysis of errors and applications, Radiation hygiene, Advanced Cephalometrics techniques, Comprehensive review of literature, Video imaging principles and application.		✓	✓	✓	✓	✓	✓			
CO8: Practice management in Orthodontics: Under this the student would learn about, Economics and dynamics of solo and group practices, Personal management, Materials management, Public relations, Professional relationship, Dental ethics and jurisprudence, Office sterilization procedures, Community based Orthodontics	✓	✓	✓	✓			✓			

Table 1071: Mapping between Course Outcomes of ' ORTHO - Part II -Paper II - Clinical Orthodontics' and POs

ORTHO - Part II -Paper II - Clinical Orthodontics										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Myofunctional Appliances: The students will be capable of diagnosing and interpreting the knowledge obtained to treat developing malocclusion at a younger age.	✓		✓			✓	✓			
CO2: Dentofacial Orthopaedics: The students will develop acumen to identify and deliver treatment regimes using orthopaedic appliances to the appropriate cases.	✓	✓			✓					
CO3: Cleft Lip & Palate Rehabilitation: The students will be trained to treat the CLCP cases with empathy starting with Naso alveolar moulding at the infant stage and then systematically treat the malocclusion using removable / fixed orthodontics during the mixed & permanent dentition by harmonizing the treatment plan with the other members of the multidisciplinary cleft team.	✓		✓	✓	✓	✓	✓			
CO4: Biology of tooth movement: Basic understanding of the applied anatomy & physiology regarding to tooth & its surrounding structures will be inculcated into the student, so that the results of application of orthodontic forces can be understood and clinically used.	✓	✓	✓		✓	✓	✓			
CO5: Orthodontics/ Orthognathic Surgery: Students will be thoroughly trained in conjoint diagnosis & treatment planning of cases requiring surgical intervention.	✓	✓		✓	✓					
CO6: Ortho/ Perio/ Prosthodontic inter relationship: Students will be trained in treating complicated cases requiring a multi-disciplinary approach in patient management.		✓	✓	✓		✓				
CO7: Basic Principles of mechanotherapy: Students will be trained in designing , construction , fabrication & management of cases using both removable & fixed orthodontics .	✓			✓	✓		✓			
CO8: Applied preventive aspects in Orthodontics: A comprehensive view of diagnosing & preventing caries, periodontal diseases to maintain proper inter arch relationship.	✓	✓	✓	✓	✓	✓				
CO9: Interceptive orthodontics: Students will be trained in growth guidance, diagnosing & treatment planning of early malocclusion both at mixed/ permanent dentition.	✓						✓			
CO10: Retention & relapse: Inculcating the acumen to analyze post treatment stability to prevent any relapse.		✓	✓	✓	✓	✓				

Table 1072: Mapping between Course Outcomes of 'ORTHO - Part II -Paper III - Essays (descriptive and analyzing type questions)' and POs

ORTHO - Part II -Paper III - Essays (descriptive and analyzing type questions)										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Recent Advances: The Students would be trained in above mentioned topics in detail, so that the student would know the recent updates along with the previous literature available.	✓	✓	✓	✓	✓	✓	✓			

### 9.3.6 MDS:PAEDIATRIC AND PREVENTIVE DENTISTRY

Table 1073: Mapping between Course Outcomes of 'Part I-Applied basic sciences' and POs

Part I-Applied basic sciences)										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Acquire knowledge about the basics of growth and development of oral and facial structures with special emphasis on maxilla and mandible.	✓	✓	✓				✓	✓	✓	
CO2: Knowledge of the regional anatomy, histology, embryology and osteology of head and neck with general disposition of thorax, abdominal and pelvic organs and translating this knowledge in Pediatric practice.	✓	✓		✓	✓	✓			✓	
CO3: Knowledge of pediatric diseases and preventive dentistry as applied to pediatric dentistry.		✓	✓	✓	✓					

Table 1074: Mapping between Course Outcomes of 'Part II paper I: Clinical Pediatric Dentistry including sedation and general anesthesia' and POs

Part II paper I Clinical Pediatric Dentistry including sedation and general anesthesia										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Attain knowledge about pediatric operative dentistry, pediatric endodontics		✓		✓	✓	✓		✓	✓	
CO2: The clinical knowledge of traumatic dental injury and its management as well as spreading awareness in community about the same		✓	✓	✓	✓	✓	✓		✓	
CO3: Application of knowledge in preventive and interceptive orthodontics including oral habits, space management	✓		✓	✓	✓	✓	✓		✓	
CO4: To have a wider view and management on genetic diseases, special children	✓		✓	✓	✓	✓	✓		✓	

Table 1075: Mapping between Course Outcomes of 'Part II paper II - Preventive and Community Dentistry as applied to Pediatric Dentistry' and POs

Part II paper II - Preventive and Community Dentistry as applied to Pediatric Dentistry										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Knowledge and clinical application of child psychology as applied to child patients.			✓			✓	✓	✓	✓	
CO2: To utilise an array of behaviour management techniques for making the child comfortable in clinic.			✓			✓	✓	✓	✓	
CO3: To be able to conduct school and dental health programmes for the benefit of entire community.		✓							✓	
CO4: To be able to apply biostatistics in research methodology.		✓							✓	

Table 1076: Mapping between Course Outcomes of 'Part II paper III- Advances in Paedriatic Dentistry' and POs

Part II paper III- Advances in Paedriatic Dentistry										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: To be able to apply the knowledge gained in all other courses to be applied practically.				✓		✓			✓	
CO2: To know about the recent advances in materials,clinical methods,medico-legal aspects,child abuse laws in pediatric dentistry			✓	✓		✓	✓	✓	✓	

### 9.3.7 MDS:PERIODONTICS AND ORAL IMPLANTOLOGY

Table 1077: Mapping between Course Outcomes of 'PERIO - Part I – Applied Basic Sciences' and POs

PERIO - Part I – Applied Basic Sciences										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Should have abroad overview of the current research and methods used in studying problems in periodontal disease.	✓					✓	✓			
CO2: Should have an understanding of the broad range of infection diseases affecting the oral cavity.	✓					✓	✓			
CO3: Should have an understanding the clinical and biological factors to be considered in the appropriate use of antimicrobial drugs	✓		✓	✓				✓		
CO4: Be aware of the contemporary principles and practices of laboratory diagnostic techniques and interpretation of laboratory reports.			✓	✓	✓					
CO5: Should have an understanding of hospital acquired infections and infections in the compromised host				✓		✓		✓		
CO6: Should have a basic knowledge on research methodology, biostatistics and be able to apply it in various research projects as well as dissertations.		✓				✓	✓			

Table 1078: Mapping between Course Outcomes of 'PERIO - Part II -Paper I - Normal Periodontal Structure And Etiopathogenesis And Epidemiology' and POs

PERIO - Part II -Paper I - Normal Periodontal Structure And Etiopathogenesis And Epidemiology										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Should have an understanding on the normal structure of periodontium and the contributing etiological factors resulting in the pathogenesis of periodontal diseases and be able to apply this knowledge in the diagnosis.	✓		✓				✓			
CO2: Should be able to record indices and plan out epidemiological survey to assess the prevalence and incidence of early onset periodontitis and adult periodontitis in Indian Population		✓	✓				✓			

Table 1079: Mapping between Course Outcomes of ‘PERIO - Part II -Paper II - Periodontal Diagnosis, Therapy and Oral Implantology’ and POs

PERIO - Part II -Paper II - Periodontal Diagnosis, Therapy and Oral Implantology										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Should have a sound knowledge of the etiopathogenesis and apply it in diagnosing various periodontal diseases and should be familiar with various periodontal therapies available to treat those cases.			✓	✓		✓		✓		
CO2: Should have an updated knowledge on the recent advancements and be able to modify their treatment accordingly.			✓	✓		✓	✓			
CO3: Develop knowledge skill and the science of oral Implantology.		✓	✓	✓	✓					
CO4: Should be aware of the various designs and placement of oral implants and follow up of implant restorations.			✓	✓	✓					

Table 1080: Mapping between Course Outcomes of ‘PERIO - Part II - Paper III - Descriptive Analyzing Type Question’ and POs

PERIO - Part II - Paper III - Descriptive Analyzing Type Question										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Should be knowledgeable to provide clinical care for patients with complex problems that are beyond the treatment skills of general dentist and demonstrate evaluative and judgment skills in making appropriate decision regarding prevention, correction and referral to deliver comprehensive care to patients.				✓		✓		✓		
CO2: Should be able to analyze various clinical scenarios and apply their knowledge accordingly.			✓	✓	✓	✓	✓			

### 9.3.8 MDS:PUBLIC HEALTH DENTISTRY

Table 1081: Mapping between Course Outcomes of ‘PHD - Part I – Applied Basic Sciences’ and POs

PHD - Part I – Applied Basic Sciences										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Apply basic sciences knowledge regarding aetiology, diagnosis and management of the prevention, promotion and treatment of all the oral conditions at the individual and community level.	✓					✓				
CO2: Ability to Take history, conduct clinical examination including all diagnostic procedure to arrive at diagnosis at the individual level and conduct survey of the community at state and national level of all conditions related to oral health to arrive at community diagnosis		✓			✓					
CO3: To apply ethical and moral standards while carrying out epidemiological researches.	✓							✓		
CO4: Be humble and accept the limitations in his knowledge and skill and to ask for help from colleagues when needed and promote team-work approach.				✓						
CO5: Respect patient’s rights and privileges including patients’ right to information						✓		✓		

Table 1082: Mapping between Course Outcomes of ‘PHD - Part II -Paper I – Public Health’ and POs

PHD - Part II -Paper I – Public Health										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1:Identify social, economic, environmental and emotional determinants in a given individual patient or a community for the purpose of planning and execution of Community Oral Health Program.	✓		✓							
CO2:Planning appropriate Community Oral Health Program conduct the program and evaluate at the community level.	✓			✓	✓			✓		
CO3:Develop the planning, implementation, evaluation and administrative skills to carry out successful community Oral Health Programs.	✓				✓					
CO4:To apply ethical and moral standards while carrying out epidemiological researches.								✓		

Table 1083: Mapping between Course Outcomes of ‘PHD - Part II -Paper II – Dental Public Health’ and POs

PHD - Part II -Paper II – Dental Public Health										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Ability to conduct Oral Health Surveys in order to identify all the oral health problems affecting the community and find solutions using multi-disciplinary approach.	✓		✓							
CO2: Develop appropriate person power at various levels and their effective utilization.		✓			✓					
CO3: Conduct survey and use appropriate methods to impart Oral Health Education.	✓				✓		✓			
CO4: Respect patient’s rights and privileges including patients right to information and right to seek a second opinion.			✓					✓		

Table 1084: Mapping between Course Outcomes of ‘PHD - Part II -Paper III -Essay’ and POs

PHD - Part II -Paper III -Essay										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Identify social, economic, environmental and emotional determinants in a given individual patient or a community for the purpose of planning and execution of Community Oral Health Program.			✓							
CO2: Ability to make use of knowledge of epidemiology to identify causes and plan appropriate preventive and control measures.				✓						
CO3: Develop the planning, implementation, evaluation and administrative skills to carry out successful community Oral Health Programs.			✓							



### 9.3.9 MDS:PROSTHODONTICS AND CROWN & BRIDGE

Table 1085: Mapping between Course Outcomes of ‘PROSTHO - PART- I Applied Basic Sciences’ and POs

PROSTHO - PART- I Applied Basic Sciences										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: To have acquired adequate knowledge and understanding of applied basic and systematic medical science knowledge in general and particular to head and neck.	✓		✓			✓	✓	✓		
CO2: Scientific literature drafting practice and research project planning ability development. Inculcates Problem based analysis and learning for material development and research.		✓			✓			✓		

PROSTHO - PART-II -Paper 1:Removable Prosthodontics and Implant supported prosthesis(Implantology), Geriatric dentistry and Cranio facial Prosthodontics

Table 1086: Mapping between Course Outcomes of ‘PROSTHO - PART-II -Paper 1’ and POs

PROSTHO - PART-II -Paper 1										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1:Training programme in Prosthodontics dentistry including Crown & Bridge & Implantology is structured to achieve knowledge and skill in theoretical and clinical laboratory, attitude, communicative skills and ability to research with understanding of social, cultural, education and environment background of the society.	✓		✓	✓	✓	✓		✓		
CO2: The postgraduates will be able to provide Prosthodontics therapy for patients with competence and working knowledge with understanding of applied medical behavioral and clinical science that are beyond the treatment skills of the general BDS graduate and MDS graduate of other specialities to demonstrate evaluative prevention, treatment after care referral to deliver comprehensive care to patients.		✓	✓	✓	✓		✓			
CO3: Scientific literature drafting practice and research project planning ability development. Inculcates Problem based analysis and learning for material development and research.		✓	✓	✓			✓			

Table 1087: Mapping between Course Outcomes of ‘PROSTHO - PART-II, Paper 2’ and POs

PROSTHO - PART-II, Paper 2: - Fixed Prosthodontics, occlusion, TMJ and aesthetics										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Training programme in Prosthodontics dentistry including Crown & Bridge & Implantology is structured to achieve knowledge and skill in theoretical and clinical laboratory, attitude, communicative skills and ability to research with understanding of social, cultural, education and environment background of the society.	✓		✓		✓	✓	✓			
CO2: Scientific literature drafting practice and research project planning ability development. Inculcates Problem based analysis and learning for material development and research.		✓		✓	✓			✓		

Table 1088: Mapping between Course Outcomes of ‘PROSTHO - PART-II, Paper 3 - Descriptive and analysing type question’ and POs

PROSTHO - PART-II, Paper 3 -Descriptive and analysing type question										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Training programme in Prosthodontics dentistry including Crown & Bridge & Implantology is structured to achieve knowledge and skill in theoretical and clinical laboratory, attitude, communicative skills and ability to research with understanding of social, cultural, education and environment background of the society.	✓		✓	✓		✓		✓		
CO2: To have acquired adequate knowledge and understanding of applied basic and systematic medical science knowledge in general and particular to head and neck.		✓			✓		✓			
CO3: The postgraduates will be able to provide Prosthodontics therapy for patients with competence and working knowledge with understanding of applied medical behavioral and clinical science that are beyond the treatment skills of the general BDS graduate and MDS graduate of other specialities to demonstrate evaluative prevention, treatment after care referral to deliver comprehensive care to patients.	✓	✓			✓	✓		✓		

### 9.3.10 MDS:ORAL AND MAXILLOFACIAL SURGERY

Table 1089: Mapping between Course Outcomes of ‘ORAL SURGERY - Part I – Applied Basic Sciences’ and POs

ORAL SURGERY - Part I – Applied Basic Sciences										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: Should have a thorough knowledge on theory and principles in general and basic medical subjects as relevant to the practice of maxillofacial surgery.	✓	✓	✓	✓						
CO2: Should have knowledge of application of basic science knowledge in diagnosis, treatment and pre and post-operative care of a patient.	✓	✓	✓							
CO3: Should have adequate knowledge in bio-statistics, epidemiology, research methodology, nutrition and computers and be able to apply it in various research projects as well as dissertations							✓	✓		
CO4: Should have an understanding the clinical and biological factors to be considered in the appropriate use of various drugs used pre and post-operative phase.		✓	✓							
CO5: Should have an understanding of hospital acquired infections and infections in the compromised host.			✓	✓						

Table 1090: Mapping between Course Outcomes of ‘ORAL SURGERY-Part II-Paper I:Minor surgery and Maxillofacial Traumas’ and POs

ORAL SURGERY-Part II-Paper I:Minor surgery and Maxillofacial Traumas										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: To have a basic understanding on the principles of surgery, diagnosis of the pathology in the oral cavity and head & neck region and to perform the accurate minor surgical procedures for the treatment of the pathology under local anaesthesia in a surgical field free of excess blood and fluids.	✓	✓					✓			
CO2: To have a basic knowledge and could be able to perform minor surgical procedures such as trans-alveolar extraction, impacted tooth, periapical surgeries, pre prosthetic surgeries, biopsy etc independently without hampering the normal anatomical structures.		✓	✓		✓		✓			
CO3: To have a basic idea about the maxillofacial fractures, diagnosis and management that includes both open and close reduction (IMF, splints etc)	✓	✓	✓	✓			✓			

Table 1091: Mapping between Course Outcomes of ' ORAL SURGERY - Part II -Paper II -Maxillofacial Surgery' and POs

ORAL SURGERY - Part II -Paper II -Maxillofacial Surgery										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: To diagnose the deformity in the head and neck region clinically as well as radiologically to identify the deformity and to have a proper treatment plan accordingly and to council the patient regarding the need of treatment.	✓						✓			
CO2: To have a basic knowledge on the systemic diseases and its treatment so that it does not interfere with the maxillofacial injuries and to have capability to manage the maxillofacial injury patient peri-operatively. To have basic knowledge on General anaesthesia such as pre-anesthetic check up of the patient, medications used in General anaesthesia and intubation techniques.		✓	✓	✓	✓		✓			
CO3: To have a fine skill on treatment of various congenital deformities of head and neck of newborn such as clefts, proper reduction of facial trauma, excision of the pathological tumours, proper treatment plan for head and neck carcinoma patients and excision and reconstruction of the excised regions so that it will not affect much to the lifestyle of the patient postoperatively.	✓	✓		✓	✓					

Table 1092: Mapping between Course Outcomes of 'ORAL SURGERY - Part II - Paper III - Essays(Descriptive Analyzing Type Question)' and POs

ORAL SURGERY - Part II - Paper III - Essays(Descriptive Analyzing Type Question)										
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1: To know about the several studies as well as different surgical procedures and its outcome that is being done on various topics of maxillofacial surgeries and recent advances throughout the world.	✓					✓		✓		
CO2: To have a basic idea on studies and could be able to conduct various studies related to different disciplines of maxillofacial surgeries and record its outcome in a proper manner and to evaluate the study statistically	✓	✓					✓	✓		

## **10 Nursing Program**

### **10.1 Program Outcomes for B.Sc. Nursing**

The following program outcomes are defined for the B.Sc. Nursing Program:

- PO1. Apply knowledge from physical, biological and behavioural sciences, medicine, including alternative systems and nursing in providing nursing care to individuals, families and communities.
- PO2. Demonstrate understanding of life style and other factors, which affect health of individuals and groups.
- PO3. Provide nursing care based on steps of nursing process in collaboration with the individuals and groups
- PO4. Demonstrate critical thinking skill in making decisions in all situations in order to provide quality care.
- PO5. Utilize the latest trends and technology in providing health care.
- PO6. Provide promotive, preventive and restorative health services in line with the national health policies and programs.
- PO7. Practice within the framework of code of ethics and professional conduct and acceptable standards of practice within the legal boundaries.
- PO8. Communicate effectively with individuals and groups and members of the health team in order to promote effective interpersonal relationships and teamwork.
- PO9. Demonstrate skills in teaching to individuals and groups in clinical/ community health settings.
- PO10. Participate effectively as members of the health team in health care delivery system.
- PO11. Demonstrate leadership and managerial skills in clinical / community health settings.
- PO12. Conduct need based research studies in various settings and utilize the research findings to improve the quality of care.
- PO13. Demonstrate awareness, interest and contribute towards advancement of self and of the profession

## **10.2 Program Outcomes for Post Basic B.Sc. Nursing**

The following program outcomes are defined for the Post Basic Nursing Program:

- PO1. Assess health status, identify nursing needs, plan, implement and evaluate nursing care for patients/clients that contribute to health of individuals, families and communities.
- PO2. Demonstrate competency in techniques of nursing based on concepts and principles from selected areas of nursing physical, biological and behavioral sciences.
- PO3. Participate as members of health team in the promotive preventive, curative and restorative health care delivery system of the country.
- PO4. Demonstrate skills in communication and interpersonal relationship.
- PO5. Demonstrate leadership qualities and decision-making abilities in various situations.
- PO6. Demonstrate skills in teaching to individuals and groups in community health settings.
- PO7. Demonstrate managerial skills in community health settings.
- PO8. Practice ethical values in their personal and professional life.
- PO9. Participate in research activities and utilize research findings in improving nursing practice.
- PO10. Recognize the need for continued learning for their personal and professional development.

## **10.3 Program Outcomes for M.Sc. Nursing**

The following program outcomes are defined for the M.Sc. Nursing Program:

- PO1. Utilize/apply the concepts, theories and principles of nursing science.
- PO2. Demonstrate advance competence in practice of nursing.
- PO3. Practice as a nurse specialist.
- PO4. Demonstrate leadership qualities and function effectively as nurse educator and manager.
- PO5. Demonstrate skill in conducting nursing research, interpreting and utilizing the findings from health related research.

PO6. Demonstrate the ability to plan and effect change in nursing practice and in the health care delivery system.

PO7. Establish collaborative relationship with members of other disciplines.

PO8. Demonstrate interest in continued learning for personal and professional advancement.

## 10.4 Mapping of CO Vs POs

### 10.4.1 B.Sc. Nursing

Table 1093: Course Outcome of English

English)	
Course Outcome	
CO1	The course is designed to enable the students to develop their communicative skill (both written and spoken).
CO2	To wrote and speak effectively in both professional and social life is the basic objective of the course.
CO3	The students are to practice their skills in verbal and Written English during classroom and clinical experiences

Table 1094: Mapping between COs of English and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1	✓	✓			✓			✓		✓			
CO2	✓	✓		✓	✓			✓		✓			
CO3			✓		✓	✓	✓		✓		✓		✓

Table 1095: Course Outcome of Anatomy and Physiology

Anatomy and Physiology)	
Course Outcome	
CO1	The Course is designed to enable students to acquire knowledge of the normal structure of various human body systems and understand the alterations in anatomical structure in disease and practice of nursing
CO2	Objective of the Physiology course: The course is designed to assist the students to acquire knowledge of the normal physiology of various human body systems and understand the alteration in physiology in disease and practice of Nursing

Table 1096: Mapping between COs of Anatomy and Physiology and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1	✓	✓	✓		✓				✓	✓		✓	
CO2	✓	✓	✓					✓		✓		✓	

Table 1097: Course Outcome of Nutrition and Biochemistry

Nutrition and Biochemistry)	
Course Outcome	
CO1	The course is designed to assist the students to acquire knowledge of nutrition for maintenance of optimum health at different stages of life and its application for practice of nursing
CO2	The course is designed to assist the students to acquire knowledge of the normal biochemical composition and functioning of human body and understand the alteration in biochemistry in disease for practice of nursing

Table 1098: Mapping between COs of Nutrition and Biochemistry and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1	✓	✓			✓			✓	✓			✓	
CO2	✓	✓			✓	✓		✓	✓			✓	



Table 1099: Course Outcome of Nursing Foundations including First Aid

Nursing Foundations including First Aid)	
Course Outcome	
CO1	This course is designed to help the students to develop an understanding of the philosophy, objectives, theories and process of nursing in various Supervised Clinical settings.
CO2	It is aimed at helping the students to acquire knowledge, understanding and skills in techniques of nursing and practice them in Supervised Clinical settings

Table 1100: Mapping between COs of Nursing Foundations including First Aid and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1	✓	✓	✓	✓	✓		✓		✓		✓	✓	✓
CO2	✓		✓		✓		✓		✓		✓	✓	

Table 1101: Course Outcome of Psychology

Psychology)	
Course Outcome	
CO1	The course is designed to assist the students to acquire knowledge of fundamentals of psychology and develop an insight into behaviour of self and others
CO2	Further it is aimed at helping them to practice the principles of mental hygiene for promoting mental health in nursing practice

Table 1102: Mapping between COs of Psychology and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1	✓	✓	✓		✓	✓			✓			✓	✓
CO2			✓			✓	✓				✓	✓	✓

Table 1103: Course Outcome of Microbiology

Microbiology)	
Course Outcome	
CO1	This course is designed to enable students to acquirer understanding of fundamentals of Microbiology and identification of various micro-organisms
CO2	It also provides opportunities for practicing control measures in hospital and community settings

Table 1104: Mapping between COs of Microbiology and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1	✓		✓		✓	✓			✓			✓	
CO2		✓	✓		✓							✓	

Table 1105: Course Outcome of Introduction to Computers

Introduction to Computers)	
Course Outcome	
CO1	This course is designed for the student to develop basic understanding of uses of computer and its applications in nursing.

Table 1106: Mapping between COs of Introduction to Computers and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1				✓	✓	✓		✓	✓			✓	✓

Table 1107: Course Outcome of Hindi / Regional Language

Hindi / Regional Language)	
Course Outcome	
CO1	This course is designed for the student to develop basic understanding

Table 1108: Mapping between COs of Hindi / Regional Language and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1					✓	✓		✓		✓			

Table 1109: Course Outcome of Sociology

Sociology)	
Course Outcome	
CO1	This course is designed to introduce the concepts of sociology related to community and social institutions in India
CO2	its relationship with health, illness and nursing.

Table 1110: Mapping between COs of Sociology and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1	✓	✓			✓			✓					
CO2		✓					✓				✓		✓

Table 1111: Course Outcome of Medical-Surgical Nursing - I

Medical-Surgical Nursing - I)	
Course Outcome	
CO1	The purpose of this course is to acquire knowledge and develop proficiency in caring for patients with medical and surgical disorders in varieties of health care settings and at home

Table 1112: Mapping between COs of Medical-Surgical Nursing - I and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1	✓		✓	✓	✓	✓	✓		✓			✓	

Table 1113: Course Outcome of Pharmacology, Pathology, Genetics

Pharmacology, Pathology, Genetics)	
Course Outcome	
CO1	This course is designed to enable students to acquire understanding of pharmaco-dynamics, pharmacokinetics, principles of therapeutics and nursing implications
CO2	This course is designed to enable students to acquire knowledge of pathology of various disease conditions and apply this knowledge in practice of Nursing
CO3	This course is designed to enable students to acquire knowledge and understanding of Genetics, its role in causation and management of defects and disease

Table 1114: Mapping between COs of Pharmacology, Pathology, Genetics and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1	✓		✓	✓	✓	✓	✓						
CO2	✓	✓	✓	✓	✓				✓			✓	
CO3	✓	✓		✓	✓	✓		✓				✓	

Table 1115: Course Outcome of Community Health Nursing - I

Community Health Nursing - I)	
Course Outcome	
CO1	This course is designed for students to appreciate the principles of promotion and maintenance of health

Table 1116: Mapping between COs of Community Health Nursing - I and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1		✓		✓	✓	✓		✓		✓	✓		

Table 1117: Course Outcome of Medical Surgical Nursing-II

Medical Surgical Nursing-II)	
Course Outcome	
CO1	The purpose of this course is to acquire knowledge and develop proficiency in caring for patients with medical and surgical disorders in varieties of health care settings and at home

Table 1118: Mapping between COs of Medical Surgical Nursing-II and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1	✓		✓	✓	✓	✓			✓			✓	✓

Table 1119: Course Outcome of Child Health Nursing

Child Health Nursing)	
Course Outcome	
CO1	This course is designed for developing an understanding of the modern approach to child care identification, prevention and nursing management of common health problems of neonates and children.

Table 1120: Mapping between COs of Child Health Nursing and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1	✓	✓		✓	✓			✓				✓	

Table 1121: Course Outcome of Mental Health Nursing

Mental Health Nursing)	
Course Outcome	
CO1	This course is designed for developing an understanding of the individual and/or family to adapt to their altered health state, especially those who have an enduring mental health illness
CO2	It helps them to learn how to cope with a range of problems, such as altered perceptions and altered beliefs

Table 1122: Mapping between COs of Mental Health Nursing and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1		✓		✓	✓		✓	✓				✓	
CO2		✓	✓	✓	✓	✓		✓				✓	

Table 1123: Course Outcome of Nursing Research & Statistics

Nursing Research & Statistics)	
Course Outcome	
CO1	The Course is designed to enable students to develop an understanding of basic concepts of research, research process and statistics
CO2	It is further, structured to conduct /participate in need based research studies in various settings and utilize the research findings to provide quality nursing care
CO3	The hours for practical will be utilized for conducting individual/group re- search project.

Table 1124: Mapping between COs of Nursing Research & Statistics and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1		✓			✓					✓		✓	✓
CO2	✓		✓	✓	✓	✓			✓			✓	✓
CO3			✓	✓	✓	✓	✓	✓	✓			✓	

Table 1125: Course Outcome of Environmental Studies

Environmental Studies)	
Course Outcome	
CO1	The Environmental Studies prepares students for careers as leaders in understanding and addressing complex environmental issues from a problem-oriented, interdisciplinary perspective.

Table 1126: Mapping between COs of Environmental Studies and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1	✓	✓		✓	✓	✓						✓	

Table 1127: Course Outcome of Midwifery and Obstetrical Nursing

Midwifery and Obstetrical Nursing)	
Course Outcome	
CO1	This course is designed for students to appreciate the concepts and principles of midwifery and obstetrical nursing.
CO2	It helps them to acquire knowledge and skills in rendering nursing care to normal and high risk pregnant woman during antenatal, natal and post natal periods in hospitals and community settings
CO3	It also helps to develop skills in managing normal and high risk neonates and participate in family welfare programme

Table 1128: Mapping between COs of Midwifery and Obstetrical Nursing and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1	✓	✓		✓	✓	✓	✓					✓	
CO2		✓	✓	✓	✓	✓	✓				✓	✓	
CO3			✓	✓	✓	✓	✓	✓	✓			✓	

Table 1129: Course Outcome of Community Health Nursing-II & Mid level healthcare provider

Community Health Nursing-II & Mid level healthcare provider )	
Course Outcome	
CO1	This course is designed for students to practice community health nursing for the individual, family and groups at both urban and rural setting by using concept and principles of health and community health nursing

Table 1130: Mapping between COs of Community Health Nursing-II & Mid level healthcare provider and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1	✓	✓		✓				✓		✓		✓	

Table 1131: Course Outcome of Management of Nursing Services and education

Management of Nursing Services and education )	
Course Outcome	
CO1	Understand the principles and functions of management
CO2	Understand the elements and process of management
CO3	Appreciate the management of nursing services in the hospital and community

Table 1132: Mapping between COs of Management of Nursing Services and education and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13
CO1		✓	✓	✓	✓	✓				✓			
CO2	✓			✓	✓		✓		✓			✓	✓
CO3			✓	✓	✓		✓				✓	✓	✓

#### 10.4.2 Post Basic B.Sc. Nursing

Table 1133: Course Outcome of Nursing Foundation

Nursing Foundation)	
Course Outcome	
CO1	Identify professional aspects of nursing
CO2	Explain theories of nursing
CO3	Identify ethical aspects of nursing profession
CO4	Utilize steps of nursing process.
CO5	Identify the role of the nurse in various levels of health services
CO6	Appreciate the significance of quality assurance in nursing
CO7	Explain current trends in health and nursing.



Table 1134: Mapping between COs of Nursing Foundation and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1			✓	✓			✓	✓	✓	✓
CO2	✓								✓	
CO3	✓				✓	✓	✓	✓		
CO4	✓	✓				✓	✓		✓	
CO5	✓	✓	✓	✓	✓	✓			✓	
CO6		✓			✓		✓	✓	✓	✓
CO7	✓	✓		✓	✓	✓			✓	

Table 1135: Course Outcome of Nutrition & dietetics

Nutrition & dietetics)	
Course Outcome	
CO1	Explain the principles and practices of nutrition and dietetics
CO2	Plan therapeutic diets in different settings
CO3	Identify nutritional needs of different age groups and plan diet accordingly.
CO4	Prepare meals using different methods utilizing cookery rules.

Table 1136: Mapping between COs of Nutrition & dietetics and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓				✓			✓	
CO2				✓		✓		✓	✓	
CO3	✓	✓		✓	✓	✓			✓	
CO4	✓	✓			✓	✓			✓	

Table 1137: Course Outcome of Biochemistry & Biophysics

Biochemistry & Biophysics)	
Course Outcome	
CO1	Identify the basic principles of Biochemistry and Biophysics
CO2	Synthesize the knowledge of these principles in various nursing situations

Table 1138: Mapping between COs of Biochemistry & Biophysics and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1		✓		✓					✓	
CO2	✓	✓				✓		✓	✓	

Table 1139: Course Outcome of Psychology

Psychology)	
Course Outcome	
CO1	Apply psychological principles while performing nursing duties
CO2	Distinguish the psychological processes during health and sickness.
CO3	Analyze own behavior patterns.
CO4	Tabulate the psychological needs of the patients for planning nursing care.
CO5	Participate in psychometric assessment of the client.

Table 1140: Mapping between COs of Psychology and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓						✓	✓	
CO2	✓				✓			✓		
CO3			✓	✓	✓		✓			✓
CO4		✓	✓	✓						
CO5	✓	✓			✓			✓	✓	

Table 1141: Course Outcome of Microbiology

Microbiology)	
Course Outcome	
CO1	Identify common disease producing micro-organisms.
CO2	Explain the basic principles of microbiology and their significance in health and disease.
CO3	Demonstrate skill in handling specimens
CO4	Explain various methods of dis-infection and sterilization
CO5	Identify the role of the nurse in hospital infection control system

Table 1142: Mapping between COs of Microbiology and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓							✓	
CO2	✓	✓							✓	
CO3	✓	✓		✓		✓				
CO4		✓		✓		✓			✓	
CO5	✓			✓		✓	✓	✓	✓	

Table 1143: Course Outcome of Maternal Nursing

Maternal Nursing)	
Course Outcome	
CO1	Describe the physiology of pregnancy, labour and puerperium
CO2	Manage normal pregnancy, labour and puerperium
CO3	Explain the physiology of lactation and advice management of breast feeding
CO4	Be skilled in providing pre and post operative nursing in obstetric conditions
CO5	Identify and manage high risk pregnancy including appropriate referrals.
CO6	Propagate the concept and motivate acceptance of families planning methods
CO7	Teach, guide and supervise auxiliary midwifery personnel.

Table 1144: Mapping between COs of Maternal Nursing and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓		✓		✓				
CO2		✓	✓		✓			✓	✓	
CO3		✓	✓	✓		✓		✓	✓	
CO4		✓	✓	✓	✓	✓		✓		
CO5		✓	✓		✓		✓	✓		
CO6		✓	✓	✓	✓	✓	✓			
CO7		✓	✓					✓	✓	✓

Table 1145: Course Outcome of Child Health Nursing

Child Health Nursing)	
Course Outcome	
CO1	Explain the modern concept of child care and the principles child health nursing
CO2	Describe the normal growth and development of children different ages.
CO3	Manage sick as well as healthy neonates and children
CO4	Identity various aspects of preventive pediatric nursing and them in providing nursing care to children in hospital community.

Table 1146: Mapping between COs of Child Health Nursing and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓						✓		
CO2	✓	✓						✓	✓	
CO3	✓	✓	✓	✓	✓	✓	✓			
CO4		✓	✓	✓		✓	✓	✓	✓	

Table 1147: Course Outcome of Medical Surgical Nursing

Medical Surgical Nursing)	
Course Outcome	
CO1	Explain relevant anatomy and physiology of various systems the body.
CO2	Explain pathophysiology of various disorders
CO3	Explain the actions side effects and nursing implication administering drugs for various disorders
CO4	Discuss the recent advancement in the treatment and care patients with medical surgical conditions
CO5	Develop skill in giving comprehensive nursing care to patient following the steps of nursing process.
CO6	Assist the patients and their families in identifying and meeting their own health needs
CO7	Appreciate the role of the nurse in the medical surgical health team.

Table 1148: Mapping between COs of Medical Surgical Nursing and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓		✓						
CO2	✓	✓		✓				✓		
CO3			✓							
CO4	✓	✓	✓	✓				✓	✓	
CO5	✓	✓	✓		✓	✓				
CO6		✓	✓	✓	✓	✓				✓
CO7		✓	✓		✓	✓	✓	✓		

Table 1149: Course Outcome of English

English)	
Course Outcome	
CO1	Ability to speak and write grammatically correct English
CO2	Effective skill in reading and understanding the English language
CO3	skill in reporting

Table 1150: Mapping between COs of English and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1			✓	✓	✓	✓				✓
CO2				✓	✓	✓	✓			
CO3			✓	✓	✓	✓	✓			

Table 1151: Course Outcome of Sociology

Sociology)	
Course Outcome	
CO1	Describe sociological concepts that are applicable to nursing
CO2	Determine role of sociology in nursing as related to social institutions in India
CO3	Develop positive attitudes towards individual, family and community.

Table 1152: Mapping between COs of Sociology and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓	✓							
CO2			✓	✓		✓	✓			
CO3		✓	✓	✓		✓	✓	✓		

Table 1153: Course Outcome of Community Health Nursing & MLHP

Community Health Nursing & MLHP)	
Course Outcome	
CO1	Explain the concept of various factors contributing to health individual family and community.
CO2	Identify the role of community health nurse
CO3	Describe national health care delivery system
CO4	Describe epidemiological methods and principles of prevent and control of illness in the community
CO5	Identify the role of personnel working in the community health set up.
CO6	Plan the work of community health nurse and supervise and train health workers.

Table 1154: Mapping between COs of Community Health Nursing & MLHP and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓	✓								
CO2		✓	✓	✓	✓	✓	✓			
CO3			✓	✓		✓	✓	✓		
CO4			✓	✓	✓	✓	✓			
CO5				✓	✓	✓	✓			
CO6				✓	✓	✓	✓	✓	✓	

Table 1155: Course Outcome of Mental Health Nursing

Mental Health Nursing)	
Course Outcome	
CO1	Identify and describe the philosophy and principles of mental health nursing.
CO2	Describe the historical development of mental health and psychiatric nursing
CO3	Classify mental disorders
CO4	Develop skill in history taking and performing mental status examination.
CO5	Describe etiological factors psycho-pathology clinical features diagnostic criteria and treatment methods used for mental disorders
CO6	Manage the patients with various mental disorders
CO7	Communicate therapeutically with patients and their families.
CO8	Identify role of the nurse in preventive psychiatry
CO9	Identify the legal aspects in practice of mental health and psychiatric nursing

Table 1156: Mapping between COs of Mental Health Nursing and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	✓							✓		
CO2	✓	✓								
CO3	✓	✓							✓	
CO4	✓	✓				✓				
CO5	✓	✓								
CO6		✓				✓		✓		
CO7	✓	✓	✓			✓		✓	✓	
CO8		✓	✓	✓				✓		
CO9			✓	✓		✓	✓		✓	✓

Table 1157: Course Outcome of Introduction to Nursing education

Introduction to Nursing education)	
Course Outcome	
CO1	Describe the philosophy and principles of education
CO2	Explain the teaching- learning process
CO3	Develop the ability to teach using various methods and media
CO4	Describe the process of assessment
CO5	Describe the administrative aspects of school of nursing
CO6	Participate in planning and organizing an in –service education programme
CO7	Develop basic skill of counseling and guidance

Table 1158: Mapping between COs of Introduction to Nursing education and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1			✓	✓		✓				
CO2			✓	✓		✓			✓	✓
CO3				✓	✓	✓				✓
CO4					✓	✓				
CO5			✓	✓	✓				✓	
CO7			✓	✓	✓	✓	✓	✓		

Table 1159: Course Outcome of Introduction to Nursing Service Administration

Introduction to Nursing Service Administration)	
Course Outcome	
CO1	Identify the principles of administration
CO2	Describe the principles and techniques of supervision
CO3	Explain the principles and methods of personnel management
CO4	Explain the principles of budgeting
CO5	Organize and manage a nursing unit effectively
CO6	Identify dynamics of organizational behaviour styles and functions of effective leadership



Table 1160: Mapping between COs of Introduction to Nursing Service Administration and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1			✓		✓		✓			✓
CO2		✓	✓	✓	✓		✓			
CO3			✓	✓	✓		✓			
CO4					✓		✓			
CO5			✓	✓	✓		✓		✓	
CO6		✓		✓	✓		✓			✓

Table 1161: Course Outcome of Introduction to Nursing Research and Statistics

Introduction to Nursing Research and Statistics)	
Course Outcome	
CO1	Define the terms and concepts of nursing research
CO2	Identify needs and scope of nursing research
CO3	Identify and define a research problem
CO4	Locate and list sources of literature for a specific study
CO5	Describe different research approaches, methods of data collection and sampling techniques with a special reference to survey method.
CO6	Develop tool for data collection
CO7	Enumerate steps of data analysis and present data summary in tabular form
CO8	Use descriptive and co-relational statistics in data analysis
CO9	conduct a group research project

Table 1162: Mapping between COs of Introduction to Nursing Research and Statistics and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1		✓							✓	✓
CO2				✓		✓		✓		
CO3	✓	✓							✓	
CO4									✓	
CO5						✓			✓	
CO6				✓					✓	
CO7									✓	
CO8			✓							
CO9		✓			✓			✓	✓	

### 10.4.3 M.Sc. Nursing

Table 1163: Course Outcome of ‘Nursing Education’

Nursing Education	
Course Outcome	
CO1	Explain the aims of education, philosophies, trends in education and health: its impact on nursing education
CO2	Describe the teaching learning process
CO3	Prepare and utilize various instructional media and methods in teaching learning process
CO4	Demonstrate competency in teaching, using various instructional strategies
CO5	Critically analyze the existing nursing education programs, their problems, issues and further trends
CO6	Describe the process of curriculum development, and the need and methodology of curriculum change, innovation, and integration
CO7	Plan and conduct continuing nursing education programs
CO8	Critically analyze the existing teacher preparation programs in nursing
CO9	Demonstrate skill in guidance and counseling
CO10	Describe the problems and issues related to administration of nursing curriculum including selection and organization of clinical experience
CO11	Explain the development of standards and accreditation process in nursing education programs
CO12	Identify research priorities in nursing education
CO13	Discuss various models of collaboration in nursing education and services
CO14	Explain the concept, principles, steps, tools and techniques of evaluation
CO15	Construct, administer and evaluate various tools for assessment of knowledge, skill, and attitude

Table 1164: Mapping between COs of ‘Nursing Education’ and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1		✓		✓	✓	✓		✓
CO2		✓	✓		✓			✓
CO3		✓		✓	✓			✓
CO4		✓		✓		✓		
CO5		✓		✓		✓		
CO6		✓		✓	✓			✓
CO7		✓		✓	✓	✓	✓	
CO8		✓	✓		✓			✓
CO9		✓		✓	✓		✓	
CO10		✓		✓	✓		✓	
CO11		✓		✓	✓	✓		
CO12					✓	✓		✓
CO13		✓		✓			✓	
CO14				✓		✓	✓	
CO15		✓		✓		✓	✓	✓

Table 1165: Course Outcome of ‘ADVANCED NURSING PRACTICE’

ADVANCED NURSING PRACTICE	
Course Outcome	
CO1	Appreciate and analyze the development of nursing as a profession
CO2	Describe ethical, legal, political and economic aspects of health care delivery and nursing practice
CO3	Explain bio-psycho-social dynamics of health, life style and health care delivery system
CO4	Discuss concepts, principles, theories, models, approaches relevant to nursing and their application
CO5	Describe scope of nursing practice
CO6	Provide holistic and competent nursing care following nursing process approach
CO7	Identify latest trends in nursing and the basis of advance nursing practice
CO8	Perform extended and expanded role of nurse
CO9	Describe alternative modalities of nursing care
CO10	Describe the concept of quality control in nursing
CO11	Identify the scope of nursing research
CO12	Use computer in patient care delivery system and nursing practice
CO13	Appreciate importance of self development and professional advancement

Table 1166: Mapping between COs of ‘ADVANCED NURSING PRACTICE’ and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓		✓	✓			
CO2		✓		✓		✓	✓	✓
CO3	✓	✓						
CO4	✓			✓	✓			
CO5		✓	✓		✓		✓	
CO6		✓	✓		✓	✓	✓	
CO7		✓	✓		✓	✓		✓
CO8		✓	✓	✓		✓		✓
CO9		✓	✓		✓	✓		
CO10		✓			✓	✓		✓
CO11		✓		✓		✓		
CO12			✓	✓				✓
CO13								

Table 1167: Course Outcome of ‘Nursing Research and Statistics’

Nursing Research and Statistics	
Course Outcome	
CO1	Define basic research terms and concepts
CO2	Review literature utilizing various sources
CO3	Describe research methodology
CO4	Develop a research proposal
CO5	Conduct a research study
CO6	Communicate research findings
CO7	Utilize research findings
CO8	Critically evaluate nursing research studies
CO9	Write scientific paper for publication

Table 1168: Mapping between COs of ‘Nursing Research and Statistics’ and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓			✓			✓
CO2		✓			✓			
CO3			✓		✓			✓
CO4			✓		✓			✓
CO5		✓	✓		✓			✓
CO6				✓	✓	✓	✓	
CO7		✓	✓	✓	✓	✓		
CO8	✓	✓		✓	✓			
CO9					✓	✓		✓

Table 1169: Course Outcome of ‘Nursing Management’

Nursing Management	
Course Outcome	
CO1	Describe the philosophy and objectives of the health care institutions at various levels
CO2	Identify trends and issues in nursing
CO3	Discuss the public administration, health care administration vis a vis nursing administration
CO4	Describe the principles of administration applied to nursing
CO5	Explain the organization of health and nursing services at the various levels/institutions
CO6	Collaborate and co-ordinate with various agencies by using multi-sectoral approach
CO7	Discuss the planning, supervision and management of nursing workforce for various health care settings
CO8	Discuss various collaborative models between nursing education and nursing service to improve the quality of nursing care
CO9	Identify and analyse legal and ethical issues in nursing administration
CO10	Describe the process of quality assurance in nursing services
CO11	Demonstrate leadership in nursing at various levels

Table 1170: Mapping between COs of ‘Nursing Management’ and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓		✓				
CO2		✓	✓	✓				
CO3		✓		✓	✓		✓	✓
CO4		✓	✓	✓		✓		
CO5		✓		✓	✓	✓	✓	
CO6		✓		✓		✓	✓	
CO7		✓		✓	✓	✓	✓	
CO8		✓		✓	✓	✓	✓	
CO9		✓	✓	✓	✓			
CO10		✓	✓		✓	✓		
CO11		✓	✓	✓	✓		✓	✓

**Clinical Specialty - I:**

Table 1171: Course Outcome of ‘Medical Surgical Nursing’

Medical Surgical Nursing	
Course Outcome	
CO1	Define basic research terms and concepts
CO2	Review literature utilizing various sources
CO3	Describe research methodology
CO4	Develop a research proposal
CO5	Conduct a research study
CO6	Communicate research findings
CO7	Utilize research findings
CO8	Critically evaluate nursing research studies
CO9	Write scientific paper for publication
CO8	Explain the basic concepts related to statistics
CO9	Describe the scope of statistics in health and nursing
CO10	Organize, tabulate and present data meaningfully
CO11	Use descriptive and inferential statistics to predict results
CO12	Draw conclusions of the study and predict statistical significance of the results
CO13	Describe vital health statistics and their use in health related research
CO14	Use statistical packages for data analysis

Table 1172: Mapping between COs of ‘Medical Surgical Nursing’ and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓	✓			✓		
CO2	✓		✓					
CO3		✓	✓			✓		
CO4		✓			✓	✓		
CO5		✓	✓			✓		
CO6		✓			✓		✓	
CO7		✓	✓	✓			✓	
CO8			✓	✓		✓	✓	
CO9		✓		✓	✓	✓		
CO10		✓		✓				
CO11		✓	✓	✓			✓	
CO12		✓	✓		✓		✓	
CO13		✓	✓	✓				✓
CO14		✓		✓				

Table 1173: Course Outcome of ‘OBSTETRIC AND GYNAECOLOGICAL NURSING’

‘OBSTETRIC AND GYNAECOLOGICAL NURSING’	
Course Outcome	
CO1	Appreciate the trends in the field of midwifery, obstetrics and gynaecology as a speciality
CO2	Describe the population dynamics and indicators of maternal and child health
CO3	Describe the concepts of biophysical, psychological and spiritual aspects of normal pregnancy, labor and puerperium
CO4	Provide comprehensive nursing care to women during reproductive period and newborns
CO5	Integrate the concepts of family centered nursing care and nursing process approach in obstetric and gynecological nursing
CO6	Identify and analyze the deviations from normal birth process and refer appropriately
CO7	Describe the pharmacological agents, their effects during pregnancy, child birth, puerperium, lactation and the role of nurse
CO8	Counsel adolescents, women and families on issues pertaining to pregnancy, child birth and lactation
CO9	Describe the role of various types of complementary and alternative therapies in obstetric and gynecological nursing
CO10	Incorporate evidence based nursing practice and identify the areas of research in the field of obstetric and gynecological nursing
CO11	Describe the recent advancement in contraceptive technology and birth control measures
CO12	Appreciate the legal and ethical issues pertaining to obstetric and gynecological nursing

Table 1174: Mapping between COs of ‘OBSTETRIC AND GYNAECOLOGICAL NURSING’ and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1		✓	✓		✓			
CO2		✓	✓	✓	✓			
CO3		✓	✓	✓				
CO4		✓	✓	✓			✓	
CO5		✓	✓	✓	✓			
CO6		✓	✓		✓	✓		
CO7		✓	✓		✓			
CO8		✓	✓	✓	✓			
CO9		✓	✓	✓	✓		✓	
CO10		✓	✓	✓	✓		✓	✓
CO11		✓		✓	✓			✓
CO12	✓	✓	✓		✓			

Table 1175: Course Outcome of ‘Child Health Nursing’

‘Child Health Nursing’	
Course Outcome	
CO1	Appreciate the history and developments in the field of pediatrics and pediatric nursing as a specialty
CO2	Apply the concepts of growth and development in providing care to the pediatric clients and their families
CO3	Appreciate the child as a holistic individual
CO4	Perform physical, developmental, and nutritional assessment of pediatric clients
CO5	Apply nursing process in providing nursing care to neonates and children
CO6	Integrate the concept of family centered pediatric nursing care with related areas such as genetic disorders, congenital malformations
CO7	Recognize and manage emergencies in neonates
CO8	Describe various recent technologies and treatment modalities in the management of high risk neonates
CO9	Appreciate the legal and ethical issues pertaining to pediatric and neonatal nursing
CO10	Prepare a design for layout and management of neonatal units
CO11	Incorporate evidence based nursing practice and identify the areas of research in the field of pediatric/neonatal nursing
CO12	Recognize the role of pediatric nurse practitioner and as a member of the pediatric and neonatal health team
CO13	Teach pediatric nursing to undergraduate students and in-service nurses



Table 1176: Mapping between COs of ‘Child Health Nursing’ and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓			✓			
CO2	✓	✓	✓					
CO3		✓	✓	✓	✓		✓	
CO4		✓	✓		✓		✓	
CO5		✓		✓	✓			
CO6	✓	✓	✓					
CO7		✓	✓	✓				
CO8		✓	✓		✓	✓	✓	
CO9		✓	✓		✓	✓		
CO10		✓			✓			
CO11		✓	✓	✓	✓		✓	
CO12		✓	✓	✓		✓	✓	
CO13		✓	✓				✓	✓

Table 1177: Course Outcome of ‘MENTAL HEALTH (PSYCHIATRIC) NURSING’

‘MENTAL HEALTH (PSYCHIATRIC) NURSING’	
Course Outcome	
CO1	Appreciate the trends and issues in the field of psychiatry and psychiatric nursing
CO2	Explain the dynamics of personality development and human behaviour
CO3	Describe the concepts of psychobiology in mental disorders and its implications for psychiatric nursing
CO4	Demonstrate therapeutic communications skills in all interactions
CO5	Demonstrate the role of psychiatric nurse practitioner in various therapeutic modalities
CO6	Establish and maintain therapeutic relationship with individual and groups
CO7	Uses assertive techniques in personal and professional actions
CO8	Promotes self-esteem of clients, others and self
CO9	Apply the nursing process approach in caring for patients with mental disorders
CO10	Describe the psychopharmacological agents, their effects and nurses role
CO11	Recognize the role of psychiatric nurse practitioner and as a member of the psychiatric and mental health team
CO12	Describe various types of alternative system of medicines used in psychiatric settings
CO13	Incorporate evidence based nursing practice and identify the areas of research in the field of psychiatric nursing

Table 1178: Mapping between COs of ‘MENTAL HEALTH (PSYCHIATRIC) NURSING’ and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓	✓					✓
CO2	✓				✓	✓		
CO3		✓		✓		✓		
CO4		✓	✓	✓	✓			
CO5		✓	✓	✓		✓	✓	
CO6		✓	✓	✓			✓	
CO7		✓	✓				✓	✓
CO8		✓	✓	✓			✓	✓
CO9		✓	✓	✓			✓	
CO10		✓	✓	✓				
CO11		✓		✓	✓	✓		
CO12		✓	✓	✓	✓		✓	
CO13	✓	✓			✓			✓

Table 1179: Course Outcome of ‘Community Health Nursing’

Community Health Nursing	
Course Outcome	
CO1	Appreciate the history and development in the field of Community Health and Community Health Nursing
CO2	Appreciate role of individuals and families in promoting health of the Community
CO3	Perform physical, developmental and nutritional assessment of individuals, families and groups
CO4	Apply the concepts of promotive, preventive, curative and rehabilitative aspects of health while providing care to the people
CO5	Apply nursing process approach while providing care to individuals, families, groups and community
CO6	Integrate the concepts of family centered nursing approach while providing care to the community
CO7	Recognize and participate in the management of emergencies, epidemics and disasters
CO8	Apply recent technologies and care modalities while delivering community health nursing care
CO9	Appreciate legal and ethical issues pertaining to community health nursing care
CO10	Conduct community health nursing care projects
CO11	Participate in planning, implementation and evaluation of various national health and family welfare programmes at local, state and the national level
CO12	Incorporate evidence based nursing practice and identify the areas of research in the community settings
CO13	Participate effectively as a member of Community Health team
CO14	Coordinate and collaborate with various agencies

Table 1180: Mapping between COs of ‘Community Health Nursing’ and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓						
CO2		✓	✓				✓	
CO3		✓	✓		✓		✓	
CO4		✓	✓	✓			✓	
CO5		✓	✓	✓				
CO6		✓	✓	✓	✓			
CO7		✓	✓	✓		✓	✓	
CO8		✓	✓	✓		✓	✓	
CO9		✓	✓		✓			
CO10		✓			✓			✓
CO11		✓	✓	✓			✓	
CO12		✓	✓		✓		✓	✓
CO13		✓	✓	✓	✓		✓	
CO14		✓		✓		✓	✓	

**Clinical Specialty - II:**

Table 1181: Mapping between COs of ‘MEDICAL SURGICAL NURSING: CARDIOVASCULAR THORACIC NURSING’ and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓	✓					
CO2		✓	✓					
CO3		✓	✓	✓				
CO4		✓	✓	✓				
CO5		✓	✓	✓	✓			
CO6		✓	✓		✓		✓	
CO7		✓	✓	✓	✓			
CO8		✓	✓	✓	✓	✓		
CO9		✓	✓	✓	✓			
CO10		✓	✓		✓	✓	✓	
CO11		✓		✓	✓		✓	
CO12		✓	✓	✓		✓		
CO13		✓	✓				✓	
CO14		✓	✓		✓			
CO15		✓	✓		✓		✓	✓
CO16		✓	✓		✓		✓	✓
CO17		✓		✓				
CO18		✓	✓				✓	✓
CO19		✓		✓	✓			

Table 1182: Course Outcome of 'MEDICAL SURGICAL NURSING: CARDIOVASCULAR THORACIC NURSING'

MEDICAL SURGICAL NURSING: CARDIOVASCULAR THORACIC NURSING	
Course Outcome	
CO1	Appreciate trends and issues related to cardio vascular and thoracic Nursing
CO2	Describe the epidemiology, etiology, pathophysiology and diagnostic assessment of cardio vascular and thoracic conditions
CO3	Participate in national health programs for health promotion, prevention and rehabilitation of patients with cardio vascular and thoracic conditions
CO4	Perform physical, psychological and spiritual assessment
CO5	Assist in various diagnostic therapeutic and surgical procedures
CO6	Apply nursing process in providing comprehensive care to patients with cardio vascular and thoracic conditions
CO7	Demonstrate advance skills/ competence in managing patients with cardio vascular and thoracic conditions including Advance Cardiac Life Support
CO8	Describe the various drugs used in cardio vascular and thoracic conditions and nurses responsibility
CO9	Demonstrate skill in handling various equipments / gadgets used for critical care of cardio vascular and thoracic patients
CO10	Appreciate team work and coordinate activities related to patient care
CO11	Practice infection control measures
CO12	Identify emergencies and complications & take appropriate measures
CO13	Discuss the legal and ethical issues in cardio vascular and thoracic nursing
CO14	Assist patients and their family to cope with emotional distress, grief, anxiety and spiritual needs
CO15	Appreciate the role of alternative system of medicine in care of patient
CO16	Incorporate evidence based nursing practice and identify the areas of research in the filed of cardio vascular and thoracic nursing
CO17	Identify the sources of stress and manage burnout syndrome among health care providers
CO18	Teach and supervise nurses and allied health workers
CO19	Design a layout of ICCU and ICTU and develop standards for cardio vascular and thoracic nursing practice

Table 1183: Course Outcome of 'MEDICAL SURGICAL NURSING:CRITICAL CARE NURSING'

MEDICAL SURGICAL NURSING:CRITICAL CARE NURSING	
Course Outcome	
CO1	Appreciate trends and issues related to Critical Care Nursing
CO2	Describe the epidemiology, etiology, pathophysiology and diagnostic assessment of critically ill patients
CO3	Describe the various drugs used in critical care and nurses responsibility
CO4	Perform physical, psychosocial and spiritual assessment
CO5	Demonstrate advanced skills / competence in managing critically ill patients including Advanced Cardiac Life Support
CO6	Demonstrate skill in handling various equipments / gadgets used for critical care
CO7	Provide comprehensive care to critically ill patients
CO8	Appreciate team work and coordinate activities related to patient care
CO9	Practice infection control measures
CO10	Assess and manage pain
CO11	Identify complications and take appropriate measures
CO12	Discuss the legal and ethical issues in critical care nursing
CO13	Assist patients and their family to cope with emotional distress, spiritual, grief and anxiety
CO14	Assist in various diagnostic, therapeutic and surgical procedures
CO15	Incorporate evidence based nursing practice and identify the areas of research in the field of critical care nursing
CO16	Identify the source of stress and manage burnout syndrome among health care providers
CO17	Teach and supervise nurses and allied health workers
CO18	Design a layout of ICU and develop standards for critical care nursing practice

Table 1184: Mapping between COs of 'MEDICAL SURGICAL NURSING:CRITICAL CARE NURSING' and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓						
CO2	✓	✓						
CO3		✓	✓			✓		
CO4	✓	✓	✓					
CO5		✓	✓		✓	✓		
CO6		✓	✓	✓				✓
CO7		✓	✓		✓			
CO8		✓	✓	✓	✓	✓	✓	
CO9		✓	✓			✓	✓	
CO10		✓	✓		✓			
CO11		✓	✓		✓			
CO12		✓	✓	✓				
CO13			✓	✓	✓		✓	
CO14		✓	✓				✓	
CO15		✓	✓	✓	✓		✓	
CO16		✓	✓		✓			
CO17		✓	✓				✓	
CO18		✓	✓		✓			

Table 1185: Course Outcome of ‘MEDICAL SURGICAL NURSING:ONCOLOGY’

MEDICAL SURGICAL NURSING:ONCOLOGY	
Course Outcome	
CO1	Explain the prevention, screening and early detection of cancer
CO2	Describe the epidemiology, etiology, pathophysiology and diagnostic assessment of oncological disorders of various body systems
CO3	Describe the psychosocial effects of cancer on patients and families
CO4	Demonstrate skill in administering / assisting in various treatment modalities used for patients with cancer
CO5	Apply nursing process in providing holistic care to patients with cancer
CO6	Apply specific concepts of pain management
CO7	Appreciate the care of death and dying patients and value of bereavement support
CO8	Describe the philosophy, concept and various dimensions of palliative care
CO9	Appreciate the role of alternative systems of medicine in care of cancer patients
CO10	Appreciate the legal and ethical issues relevant to oncology nursing
CO11	Recognize and manage Oncological emergencies
CO12	Counsel the patients with cancer and their families
CO13	Incorporate evidence based nursing practice and identify the areas of research in the field of oncology nursing
CO14	Recognize the role of oncology nurse practitioner as a member of oncology team
CO15	Collaborate with other agencies and utilize resources in caring for cancer patients
CO16	Teach and supervise nurses and allied health workers
CO17	Design a layout and develop standards for management of oncology units / hospitals and nursing care

Table 1186: Mapping between COs of 'MEDICAL SURGICAL NURSING:ONCOLOGY' and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓	✓					
CO2		✓	✓					
CO3		✓	✓		✓			
CO4		✓	✓	✓	✓			
CO5		✓	✓	✓	✓			
CO6		✓	✓	✓	✓			
CO7		✓	✓	✓	✓	✓	✓	
CO8		✓	✓		✓		✓	
CO9			✓	✓	✓		✓	
CO10		✓	✓			✓		
CO11		✓	✓					
CO12		✓	✓	✓	✓		✓	
CO13		✓	✓	✓	✓	✓		✓
CO14		✓	✓	✓				
CO15		✓	✓	✓				
CO16		✓		✓	✓	✓		
CO17		✓		✓	✓		✓	



Table 1187: Course Outcome of 'MEDICAL SURGICAL NURSING:NEUROSCIENCES NURSING'

MEDICAL SURGICAL NURSING:NEUROSCIENCES NURSING	
Course Outcome	
CO1	Appreciate trends and issues related to neurology and neurosurgical Nursing
CO2	Review the anatomy and physiology of nervous system
CO3	Describe the epidemiology, etiology, pathophysiology and diagnostic assessment of patients with neurological an neurosurgical disorders
CO4	Perform neurological assessment and assist in diagnostic procedures
CO5	Describe the concepts and principles of neuroscience nursing
CO6	Describe the various drugs used in neuroscience nursing
CO7	Assist in various therapeutic and surgical procedures in neuroscience nursing
CO8	Demonstrate advance skills / competence in managing patients with neurological and neurosurgical disorder following nursing process approach
CO9	Identify psychosocial problems of patients with disabilities and assist patients and their family to cope with emotional distress, spiritual, grief and anxiety
CO10	Participate in preventive, promotive and rehabilitative services for neurological and neurosurgical patients
CO11	Explain the legal and ethical issues related to brain death, organ transplantation and practice of neuroscience nursing
CO12	Incorporate evidence based nursing practice and identify the areas of research in the field on neuroscience nursing
CO13	Organic and conduct inservice education program for nursing personnel
CO14	Develop standards of care for quality assurance in neuroscience nursing practice
CO15	Identify the sources of stress and manage burnout syndrome among health care providers
CO16	Teach and supervise nurses and allied health workers
CO17	Plan and develop physical layout of neuro intensive care unit

Table 1188: Mapping between COs of MEDICAL SURGICAL NURSING:NEUROSCIENCES NURSING' and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓	✓					
CO2	✓	✓						
CO3	✓	✓			✓			
CO4		✓			✓			
CO5	✓	✓						
CO6		✓	✓		✓			
CO7		✓	✓	✓	✓			
CO8		✓	✓	✓	✓			✓
CO9		✓			✓	✓		
CO10		✓	✓	✓	✓			
CO11		✓		✓	✓		✓	
CO12		✓	✓	✓			✓	✓
CO13				✓		✓	✓	✓
CO14		✓	✓	✓	✓			
CO15		✓	✓	✓				
CO16		✓	✓	✓			✓	
CO17		✓	✓				✓	

Table 1189: Course Outcome of ‘MEDICAL SURGICAL NURSING:NEPHROUROLOGY NURSING’

MEDICAL SURGICAL NURSING:NEPHROUROLOGY NURSING	
Course Outcome	
CO1	Appreciate trends and issues related to nephro and urological nursing
CO2	Describe the epidemiology, etiology, pathophysiology and diagnostic assessment of nephro and urological conditions
CO3	Perform physical, psychosocial and spiritual assessment
CO4	Assist in various diagnostic, therapeutic and surgical interventions
CO5	Provide comprehensive nursing care to patients with nephro and urological conditions
CO6	Describe the various drugs used in nephro and urological conditions and nurses responsibility
CO7	Demonstrate skill in handling various equipments / gadgets used for patients with nephro and urological conditions
CO8	Appreciate team work and coordinate activities related to patient care
CO9	Practice infection control measures
CO10	Identify emergencies and complications & take appropriate measures
CO11	Assist patients and their family to cope with emotional distress, grief, anxiety and spiritual needs
CO12	Discuss the legal and ethical issues in nephro and urological nursing
CO13	Identify the sources of stress and manage burnout syndrome among health care providers
CO14	Appreciate the role of alternative system of medicine in the care of patient
CO15	Incorporate evidence based nursing practice and identify the areas of research in the filed of nephro and urological nursing
CO16	Teach and supervise nurses and allied health workers
CO17	Design a layout of kidney transplant unit and dialysis unit
CO18	Develop standards of nephro urological nursing practice

Table 1190: Mapping between COs of ‘MEDICAL SURGICAL NURSING:NEPHROUROLOGY NURSING’ and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓						
CO2	✓	✓	✓					
CO3		✓	✓					
CO4	✓	✓	✓					
CO5		✓	✓	✓			✓	
CO6		✓	✓		✓			
CO7		✓	✓	✓	✓			
CO8		✓	✓	✓	✓		✓	
CO9		✓	✓	✓	✓		✓	
CO10		✓	✓	✓	✓			
CO11		✓	✓		✓			
CO12		✓	✓		✓	✓		
CO13		✓	✓		✓			
CO14		✓	✓	✓	✓			✓
CO15		✓	✓	✓			✓	✓
CO16				✓	✓	✓	✓	
CO17		✓		✓	✓			
CO18		✓				✓	✓	

Table 1191: Course Outcome of 'MEDICAL SURGICAL NURSING: ORTHOPAEDIC NURSING'

MEDICAL SURGICAL NURSING: ORTHOPAEDIC NURSING	
Course Outcome	
CO1	Appreciate the history and developments in the field of orthopedic nursing
CO2	Identify the psycho social needs of the patient while providing holistic care
CO3	Perform physical and psychological assessment of patients with orthopedic conditions and disabilities
CO4	Describe various disease conditions and their management
CO5	Discuss various diagnostic tests required in orthopedic conditions
CO6	Apply nursing process in providing care to patients with orthopedic conditions and those requiring rehabilitation
CO7	Recognize and manage orthopedic emergencies
CO8	Describe recent technologies and treatment modalities in the management of patients with orthopedic conditions and those requiring rehabilitation
CO9	Integrate the concept of family centered, long term care and community based rehabilitation to patients with orthopedic conditions
CO10	Counsel the patients and their families with orthopedic conditions
CO11	Describe various orthotic and prosthetic appliances
CO12	Appreciate the legal and ethical issues pertaining to patients with orthopedic conditions and those requiring rehabilitation
CO13	Appreciate the role of alternative system of medicine in care of patients with orthopedic conditions
CO14	Incorporate evidence based nursing practice and identify the areas of research in the field of orthopedic nursing
CO15	Recognize the role of orthopedic nurse practitioner and as a member of the orthopedic and rehabilitation team
CO16	Teach orthopedic nursing to undergraduate students and in service nurses
CO17	Prepare a design and layout of orthopedic and rehabilitative units

Table 1192: Mapping between COs of ‘MEDICAL SURGICAL NURSING:ORTHOPAEDIC NURSING’ and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓	✓					
CO2		✓	✓	✓				
CO3		✓	✓		✓			
CO4		✓	✓		✓			
CO5	✓	✓						
CO6		✓	✓	✓			✓	
CO7		✓	✓	✓	✓		✓	
CO8		✓	✓	✓	✓		✓	
CO9		✓			✓	✓		
CO10		✓	✓	✓				
CO11		✓	✓	✓				
CO12		✓	✓	✓	✓			
CO13		✓	✓	✓			✓	
CO14		✓		✓	✓		✓	✓
CO15		✓	✓		✓	✓		
CO16		✓	✓				✓	✓
CO17		✓					✓	

Table 1193: Course Outcome of 'MEDICAL SURGICAL NURSING:GASTROENTEROLOGY NURSING'

MEDICAL SURGICAL NURSING:GASTROENTEROLOGY NURSING	
Course Outcome	
CO1	Appreciate trends and issues related to gastro enterology nursing
CO2	Describe the epidemiology, etiology, pathophysiology and diagnostic assessment of gastrointestinal conditions
CO3	Participate in national health programs for health promotion, prevention and rehabilitation of patients with gastrointestinal conditions
CO4	Perform physical, psychosocial and spiritual assessment
CO5	Assist in various diagnostic, therapeutic and surgical procedures
CO6	Provide comprehensive care to patients with gastrointestinal conditions
CO7	Describe the various drugs used in gastrointestinal conditions and nurses responsibility
CO8	Demonstrative skill in handling various equipments/ gadgets used for patients with gastrointestinal conditions
CO9	Appreciate team work and coordinate activities related to patient care
CO10	Practice infection control measures
CO11	Identify emergencies and complications and take appropriate measures
CO12	Assist patients and their family to cope with emotional distress, grief, anxiety and spiritual needs
CO13	Discuss the legal and ethical issues in GE nursing
CO14	Identify the sources of stress and manage burnout syndrome among health care providers
CO15	Appreciate the role of alternative system of medicine in care of patient
CO16	Incorporate evidence based nursing practice and identify the areas of research in the filed of gastrointestinal nursing
CO17	Teach and supervise nurses and allied health workers
CO18	Design a layout of Gastro enterology intensive care unit (GEICU) , Liver care/ transplant unit

Table 1194: Mapping between COs of 'MEDICAL SURGICAL NURSING:GASTROENTEROLOGY NURSING' and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓						
CO2	✓	✓	✓					
CO3	✓	✓	✓	✓				
CO4		✓	✓		✓			
CO5		✓	✓	✓				
CO6		✓	✓	✓	✓		✓	
CO7		✓	✓				✓	
CO8		✓	✓		✓		✓	
CO9		✓	✓				✓	✓
CO10		✓	✓	✓	✓			
CO11		✓	✓		✓			
CO12		✓	✓	✓				
CO13		✓	✓	✓				
CO14		✓	✓		✓			
CO15		✓	✓				✓	✓
CO16		✓	✓	✓	✓		✓	✓
CO17		✓	✓	✓				
CO18		✓	✓			✓		



Table 1195: Course Outcome of ‘OBSTETRIC AND GYNAECOLOGICAL NURSING’

OBSTETRIC AND GYNAECOLOGICAL NURSING	
Course Outcome	
CO1	Describe the epidemiology , etiology, pathophysiology and diagnostic assessment of women with obstetric and gynaecological conditions
CO2	Perform physical, psychosocial, cultural and spiritual assessment
CO3	Demonstrate competence in caring for women with obstetrical and gynaecological conditions
CO4	Demonstrate competence in caring for high risk newborn
CO5	Identify and manager obstetrical and neonatal emergencies as per protocol
CO6	Practice infection control measures
CO7	Utilize recent technology and various diagnostic, therapeutic modalities in the management of obstetrical , gynecological and neonatal care
CO8	Demonstrate skill in handling various equipments/ gadgets used for obstetrica, gynaecological and neonatal care
CO9	Teach and supervise nurses and allied health workers
CO10	Design a layout of speciality units of obstetrics and gynecology
CO11	Develop standards for obstetrical and gynaecological nursing practice
CO12	Counsel women and familes
CO13	Incorporate evidence based nursing practice and identify the areas of research in the field of obstetrical and gynaecological nursing
CO14	Function as independent midwifery nurse practitioner

Table 1196: Mapping between COs of ‘OBSTETRIC AND GYNAECOLOGICAL NURSING’ and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓	✓					
CO2		✓	✓					
CO3		✓	✓	✓				
CO4		✓	✓	✓	✓			
CO5		✓	✓	✓	✓		✓	
CO6		✓			✓	✓		
CO7		✓	✓		✓		✓	✓
CO8		✓	✓	✓				
CO9		✓	✓	✓			✓	
CO10		✓					✓	
CO11		✓	✓	✓	✓	✓	✓	
CO12		✓	✓	✓	✓			
CO13		✓	✓				✓	✓
CO14		✓	✓	✓	✓		✓	✓

Table 1197: Course Outcome of ‘PEDIATRIC (CHILD HEALTH) NURSING’

PEDIATRIC (CHILD HEALTH) NURSING	
Course Outcome	
CO1	Apply the nursing process in the care of ill infants to pre adolescents in hospital and community
CO2	Demonstrate advanced skills/competence in nursing management of children with medical and surgical problems
CO3	Recognise and manage emergencies in children
CO4	Provide nursing care to critically ill children
CO5	Utilize the recent technology and various treatment modalities in the management of high risk children
CO6	Prepare a design for layout and describe standards for management of pediatric units/ hospitals
CO7	Identify areas of research in the field of pediatric nursing

Table 1198: Mapping between COs of ‘PEDIATRIC (CHILD HEALTH) NURSING’ and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓	✓	✓		✓		
CO2		✓	✓	✓	✓			
CO3		✓	✓	✓			✓	
CO4		✓	✓	✓		✓	✓	
CO5		✓	✓	✓	✓		✓	✓
CO6		✓	✓	✓				
CO7				✓	✓		✓	✓

Table 1199: Course Outcome of ‘PSYCHIATRIC (MENTAL HEALTH) NURSING’

PSYCHIATRIC (MENTAL HEALTH) NURSING	
Course Outcome	
CO1	Apply the nursing process in the care of patients with mental disorders in hospital and community
CO2	Demonstrate advanced skill/competence in nursing management of patients with mental disorders
CO3	Identify and care for special groups like children, adolescents, women, elderly, abused and neglected, people living with HIV/AIDS
CO4	Identify and manage psychiatric emergencies
CO5	Provide nursing care to critically ill patients with mental disorders
CO6	Utilize the recent technology and various treatment modalities in the management of patients with mental disorders
CO7	Demonstrate skills in carrying out crisis intervention
CO8	Appreciate the legal and ethical issues pertaining to psychiatric nursing
CO9	Identify areas of research in the field of psychiatric nursing
CO10	Prepare a design for layout describe standards for management of psychiatric units/emergency units/hospitals
CO11	Teach psychiatric nursing to undergraduate students and in-service nurses

Table 1200: Mapping between COs of ‘PSYCHIATRIC (MENTAL HEALTH) NURSING’ and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1		✓	✓	✓				
CO2		✓	✓	✓	✓			
CO3		✓	✓	✓			✓	
CO4		✓	✓	✓	✓		✓	
CO5		✓	✓		✓	✓	✓	
CO6		✓	✓	✓		✓	✓	
CO7		✓	✓	✓			✓	
CO8		✓	✓					
CO9		✓		✓	✓		✓	✓
CO10		✓		✓			✓	
CO11		✓	✓	✓	✓			✓

Table 1201: Course Outcome of ‘Community Health Nursing’

Community Health Nursing	
Course Outcome	
CO1	Appreciate trends and issues related to community health Nursing-reproductive and child health, school health, Occupational health, international health, rehabilitation, geriatric and mental health
CO2	Apply epidemiological concepts and principles in community health
CO3	Perform community health assessment and plan health programmes
CO4	Describe the various components of Reproductive and child health programme
CO5	Demonstrate leadership abilities in organizing community health nursing services by using inter-sectoral approach
CO6	Describe the role and responsibilities of community health nurse in various national health and family welfare programmes
CO7	Participate in the implementation of various national health and family welfare programme
CO8	Demonstrate competencies in providing family centered nursing care independently
CO9	Participate/Conduct research for new insights and innovative solutions to health problems
CO10	Teach and supervise nurse and allied health workers
CO11	Design a layout of sub center/Primary health center/Community health centre and develop standards for community health nursing practice

Table 1202: Mapping between COs of ‘Community Health Nursing’ and POs

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	✓	✓	✓					
CO2	✓	✓						
CO3		✓	✓		✓			
CO4		✓			✓		✓	
CO5		✓	✓	✓			✓	
CO6		✓	✓		✓			
CO7		✓		✓	✓	✓	✓	
CO8		✓	✓	✓			✓	
CO9		✓		✓	✓		✓	✓
CO10		✓	✓	✓			✓	
CO11		✓	✓				✓	

## 11 Legal Studies

### 11.1 POs and PSOs for BA.LL.B(H)/B.BA.LL.B(H)/LL.B(H)

The following POs are defined for BA.LL.B(H)/B.BA.LL.B(H)/LL.B(H) Program;

- PO1. **Legal Knowledge:** To Apply the knowledge of laws in practice.
- PO2. **Overall Awareness about the Country:** Develop awareness about the socio-economic, political and cultural environment in the nations.
- PO3. **Appreciation of Law:** Appreciate how law impacts individuals, organisations, markets, societies and other disciplines.
- PO4. **Professional Skills:** Demonstrate professional skills needed for competent and ethically upright legal profession; such as interviewing, counseling, and collaboration.
- PO5. **Significance of Law:** Understand and respect law as a social institution in the context of a diverse state.
- PO6. **Conceptual Clarity:** Demonstrate an advanced understanding of the conceptual foundations of law within the humanistic intellectual tradition.
- PO7. **Competitive Competency:** Apply the fundamental professional practices necessary to effectively participate and compete in the legal profession.

- PO8. **Individual and team work:** Ability to work efficiently as an individual and in groups.
- PO9. **Communication:** Demonstrate the communication skills for preparing case briefs and drafting complex legal documents.
- PO10. **Problem Analysis:** Apply analytical skills to independently interpret the existing law based on legislative texts and judicial pronouncements.

The following PSOs are defined for BA.LL.B(H)/B.BA.LL.B(H) Program;

- PSO1. Demonstrate knowledge and understanding of substantive & procedural laws including various legislations and connected rules & regulations. Develop the skill of drafting or art of framing various plaints, petitions, writ, letters, using proper English format with clarity.
- PSO2. To analyze the social problems and understanding social dynamics. Provide the opportunity to place the law in the context of other disciplines in order to provide an integrated understanding of law and its function in society.
- PSO3. Students are equipped with the knowledge of teaching methods through the subject on Teaching Pedagogy thereby to enabling them to enter the teaching profession and also in to the Corporate and IP Sectors.

The following PSOs are defined for LL.B(H) Program;

- PSO1. Students will be prepared to contribute effectively in the areas of constitutional law, civil law, criminal law, international law, corporate law, labour law and environmental law.
- PSO2. Students will be able to apply a systematic approach to the acquisition of knowledge, underpinning concepts and principles and they can deploy a range of subject specific, cognitive and transferable skills.
- PSO3. Students will have an awareness about the socioeconomic. political and the cultural environment and become a socially responsible citizen.

## **11.2 POs and PSOs for LL.M**

The following POs are defined for LL.M Program;

- PO1. **Critical Analysis:** To develop critical thinking amongst students so as to enable them to understand indepth knowledge of legal system.

- PO2. **Research Aptitude:**To improve research aptitude in view of providing platform by undertaking research projects.
- PO3. **Legal Knowledge:** To explore & apply the legal knowledge of their specialization in context.
- PO4. **Teaching Skills:** To provide a platform for the Students to become academicians and lifelong learners.
- PO5. **Interdisciplinary Skill:** To create an awareness and understanding of the ethical, social, political and economic context.
- PO6. **Competitive Competence:**To develop logical legal arguments by exhibiting the ability to research and in their field of specialisation.
- PO7. **Subject Expertise:**To identify interest of students in learning & provide them to choose area of their choice.
- PO8. **Advocacy Skill:**Ability to learn the art of communicating and demonstrating their oral advocacy skills.
- PO9. **Soft Skills:**Develop and demonstrate strong soft-skills for making them industry-ready, when they complete the programme.
- PO10. **Understanding Corporate Values:**Identify and resolve legal, cultural, and global issues affecting business communication.

The following PSOs are defined for LL.M Program;

- PSO1. Students will be prepared to offer specialised expertise in the field of corporate law; benefitting the corporations at large and contributing to the growth of business sector as a whole.
- PSO2. Students will be inculcated with traits of critical thinking required for an expert in international law, and to use their analytical skills while undertaking any research in the legal field.
- PSO3. Students will be able to learn the art of doing doctrinal and empirical research which covers knowledge and implementation of various tools and techniques of research and they will be prepared to use in-depth knowledge in specific areas for a range of fields from legal practice to academics.

## 11.3 Mapping of CO Vs POs

### 11.3.1 BA.LL.B(H)

Table 1203: Mapping between COs of LE 101 and (POs& PSOs)

LE 101:English - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:To study and relate various writing formats		✓		✓		✓	✓		✓				✓
CO2:To understand and correspond ideas to the listeners.	✓	✓	✓		✓	✓	✓		✓	✓	✓		✓
CO3:Familiarize to a particular audience and purpose in academic writing.	✓	✓	✓		✓	✓	✓		✓		✓	✓	✓
CO4:To use Standard English grammar and effective sentence skills.	✓	✓	✓		✓	✓	✓				✓	✓	
CO5:Incorporate significant thinking in all steps of the process writing.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓

Table 1204: Mapping between COs of LC 102 and (POs& PSOs)

MHA-101:Law of Contract-I (General Principles of Contract)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Explain the concepts in Contractual laws.	✓		✓		✓	✓					✓		
CO2:Identify the general principles of Indian Contract Act, 1872.	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO3:Apply the global business laws to current business environment.	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
CO4:Analyse the principles of business and strategies adopted by firms.	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	
CO5:Integrate concept of business law with foreign trade.	✓	✓				✓	✓		✓	✓			✓

Table 1205: Mapping between COs of LC 103 and (POs& PSOs)

LC 103:Legal Method													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:To have basic understanding of the debates around the nature of law.	✓		✓	✓	✓	✓			✓	✓	✓		
CO2:To know the organization of the legal institutions and the hierarchy of courts in India.	✓	✓	✓		✓							✓	
CO3:To know the various theories propounded by jurists and to undertake and present research on such issues.	✓	✓	✓	✓	✓				✓			✓	
CO4:To know the various sources of law and be able to blend such sources and use them to formulate arguments in their research.	✓	✓	✓	✓	✓				✓			✓	
CO5:To know the fundamentals of law and its applications	✓	✓	✓		✓	✓					✓		



Table 1206: Mapping between COs of LM 104 and (POs& PSOs)

LM 104:Moot Court Exercise													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On the conclusion of the Module, the students would be able to appreciate the research, oratorical and articulation skills required of a lawyer."	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Students will be able to comprehend the practicalities of the justice system and the pivotal role the courts play in dispensation of justice."	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:They will also get a practical exposure to the techniques of client interviewing and the substantive as well as procedural steps involved in preparation of a brief by lawyers."	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Students will have practical experience of the professional aspects of the subjects they have studies	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:It will help students unearth their potential for the profession and the desirable improvements for the same.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1207: Mapping between COs of LA 111 and (POs& PSOs)

LA 111:History - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:To have an understanding of the processes of transform and progress through which human societies have originated to their present stage of progress.					✓				✓	✓			✓
CO2:Know of the general routes of human civilizations and an appreciation of the basic unity of mankind.		✓			✓				✓	✓			✓
CO3:Analyze connection between the past and the present		✓				✓							✓
CO4:Develop practical skills helpful in the study and understanding of various historical events.		✓						✓				✓	✓
CO5:To present clear and compelling arguments based on critical analysis of diverse historical sources.		✓				✓		✓				✓	✓

Table 1208: Mapping between COs of LA 112 and (POs& PSOs)

LA 112:Political Science-I (Political Theory and Organisation)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:To understand the nature and scope of political theory.		✓				✓			✓			✓	
CO2:To understand the significance of political theory.		✓	✓		✓	✓			✓			✓	
CO3:To acquaint with the theories, approaches, concepts and principles of political theory.	✓	✓		✓	✓	✓						✓	
CO4:To appreciate the procedure of different theoretical ideas in political theory.		✓	✓	✓	✓	✓						✓	✓
CO5:To evaluate the theories of origin of the state.		✓	✓	✓	✓	✓						✓	✓

Table 1209: Mapping between COs of LA 113 and (POs& PSOs)

LA 113:Economics - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Expand ideas of the basic features of Indian economy and its potential on natural resources.		✓				✓				✓		✓	✓
CO2:Understand the significance, causes and impact of population escalation and its allocation with economic development.		✓			✓	✓	✓					✓	✓
CO3:Know the significance of preparation undertaken by the government on the various objectives	✓	✓	✓		✓	✓				✓		✓	✓
CO4:Understand condition of market, production, demand and supply chain and its analysis.	✓	✓	✓		✓	✓			✓			✓	✓
CO5:Students will be able to identify and explain the key concepts underlying comparative advantage and market failure.	✓	✓	✓		✓	✓						✓	✓

Table 1210: Mapping between COs of LE 121 and (POs& PSOs)

LE 121:English - II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:To improve the accuracy, fluency, in producing and understanding spoken and written English.		✓		✓		✓	✓		✓				✓
CO2:Develop the ability as critical readers and writers.	✓	✓	✓		✓	✓	✓		✓	✓	✓		✓
CO3:Enhance their presentation skills through participation in seminars and group discussions.	✓	✓	✓		✓	✓	✓		✓		✓	✓	✓
CO4:Enhance their vocabulary through one word substitute and pairs of word.	✓	✓	✓		✓	✓	✓				✓	✓	
CO5:Enhance their personality through effective communication.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓

Table 1211: Mapping between COs of LC 122 and (POs& PSOs)

LC 122:Law of Contract – II (Specific Contract)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Define distinguish and apply the basic concepts and terminologies of Law of Contract.	✓		✓		✓	✓					✓		
CO2:Define and Distinguish amongst the various processes involved in contract formation.	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO3:Identify the relevant legal issues that arise on a given set of facts in the area of contract law.	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
CO4:Understand the Contract of bailment, pledge and agency and the extent of these authorities and various doctrines related to these concepts.	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	
CO5:Understand the sales of goods act and partnership act their related doctrines and their outcomes.	✓	✓				✓	✓		✓	✓			✓

Table 1212: Mapping between COs of LC 123 and (POs& PSOs)

LC 123:Law of Torts –I & The Consumer Protection Act													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Analyze the foundational principles of tort law.	✓		✓		✓	✓					✓		
CO2:Apply tort law to complex problems using appropriate legal problem solving technique.	✓		✓		✓		✓		✓	✓	✓	✓	
CO3:Have a basic idea and understanding of Justification and liabilities in torts.		✓	✓		✓		✓	✓		✓		✓	
CO4:Have a clear understanding of Consumer Protection Act.		✓	✓	✓	✓	✓	✓	✓		✓		✓	
CO5:Have clear understanding as to vicarious liability strict and absolute liability and consumer protection act.	✓	✓				✓	✓		✓	✓			✓

Table 1213: Mapping between COs of LA 131 and (POs& PSOs)

LA 131:History -II (History of Modern India)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Distinguish between modern history and its relevance with the ancient history.					✓				✓	✓			✓
CO2:Students will be able to learn basic narrative of historical events during the different period of Indian History.		✓			✓				✓	✓			✓
CO3:The students will be able to understand and evaluate historical ideas, arguments, point of view.		✓				✓							✓
CO4:Present clear and compelling arguments based on critical analysis of diverse historic sources.		✓						✓				✓	✓
CO5:Understand the progress of Indian national movement and other movements such as civil disobedience movement, Quit India movement and others.		✓				✓		✓				✓	✓

Table 1214: Mapping between COs of LA 132 and (POs& PSOs)

LA 132:Political Science-II (Political Ideas and Ideologies)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the theories and concepts of Political science.		✓				✓			✓			✓	
CO2:Compare and contrast between Indian and Western Political Thinkers.		✓	✓		✓	✓			✓			✓	
CO3:It will teach student the different aspect of Traditional and Contemporary Ideologies.	✓	✓		✓	✓	✓						✓	
CO4:Students will get the information about the work and thought of Indian Political thinker.		✓	✓			✓						✓	✓
CO5:They will be able to express their thoughts and ideas about the content.		✓	✓	✓	✓	✓						✓	✓

Table 1215: Mapping between COs of LA 133 and (POs& PSOs)

LA 133:Sociology-I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the Human behavior within the human context			✓	✓	✓						✓	✓	✓
CO2:It will give students an idea of the foundation of society.		✓			✓	✓						✓	✓
CO3:It will also help the student understand the concept of socialization given by various propounders.	✓	✓	✓		✓	✓						✓	✓
CO4:Understand the concept of family, marriage, and the deviance in social inequality crimes.	✓	✓			✓	✓			✓	✓		✓	
CO5:They will understand the social values in the society.						✓						✓	

Table 1216: Mapping between COs of LC 202 and (POs& PSOs)

LC 202:Family Law-I (Hindu Law)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:connect the core concept relating to traditional law with the reformed modern Hindu law which is based on statutes.		✓			✓	✓						✓	✓
CO2:Appraise on the nature of property transaction that exist in Hindu family relations and the importance of ancestral property and karta in hindu family.	✓	✓			✓	✓				✓		✓	✓
CO3:Analyse and critically understand the concept of marriage and relate it to the changing nature of marriage as is witnessed today such as live-in relationships and recognition of same sex marriages.	✓	✓			✓	✓				✓		✓	✓
CO4:Better understanding the core concepts of Hindu adoption laws. The complete subject will help students analyze it from sociological perspective thereby understanding the importance adoption law has in the development of child.	✓	✓	✓			✓						✓	✓
CO5:Appraise the law relating to guardianship and the importance of guardian in matter relating to wards.	✓	✓	✓			✓						✓	✓

Table 1217: Mapping between COs of LC 203 and (POs& PSOs)

LC 203:Law of Torts-II & The Motor Vehicle Act													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Describe The provisions of the Motor Vehicles Acts relating to registration of motor vehicles.	✓		✓		✓	✓					✓		
CO2:Necessity of registration, Procedure for registration, No-objection certificate, Age limit for motor vehicles, Control of transport vehicles, Provisions relating to state transport undertakings, Construction, equipment and maintenance of motor vehicles, Control of traffic, Motor vehicles temporarily leaving or visiting India.	✓		✓		✓		✓		✓	✓	✓	✓	
CO3:Liability to pay compensation, permanent disablement, insurance of motor vehicles, against third party risks, Motor Vehicles Claims Tribunal, offences and penalties under the Act		✓	✓		✓		✓	✓		✓		✓	
CO4:To acquaint students with the different torts against persons and personal relationships and the circumstances in which a person is liable for committing such torts		✓	✓	✓	✓	✓	✓	✓		✓		✓	
CO5:Acquaint students with the different torts against properties and the circumstances in which a person is liable for committing such torts.	✓	✓				✓	✓		✓	✓			✓

Table 1218: Mapping between COs of LA 211 and (POs& PSOs)

LA 211:Sociology- II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify and apply sociological concept to understand social phenomena			✓	✓	✓						✓	✓	✓
CO2:Identify and assess the assumptions underlying different theoretical perspectives.		✓			✓	✓						✓	✓
CO3:Evaluate and respond to inequalities and emerge from a global, integrated, and unequal world.	✓	✓	✓		✓	✓						✓	✓
CO4:Convey sociological concepts and understandings to a broader audience.	✓	✓			✓	✓			✓	✓		✓	
CO5:Use sociological knowledge, skills, and theories to engage with the world around them, and to promote social justice.						✓						✓	

Table 1219: Mapping between COs of LA 212 and (POs& PSOs)

LA 212:Political Science-III (International Relations and International Organisations)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Entail an introduction of ideologies and themes like democracy and justice and also to the ideology of liberalism.		✓				✓			✓			✓	
CO2:Understand key principles of conservatism and will also entail a discussion on contemporary conservative parties and groups.		✓	✓		✓	✓			✓			✓	
CO3:They will deal with the phenomena of fundamentalism and terrorism that is ever rising and it seeks to provide explanations for this growth.	✓	✓		✓	✓	✓						✓	
CO4:They will be able to differentiate democratic theories and theories of multiculturalism and the issue of post-colonialism and minority rights.		✓	✓	✓	✓	✓						✓	✓
CO5:Analyze the modern theories and also will be an open discussion on the impact of ideology and how to make sense of this in the 21st century.		✓	✓	✓	✓	✓						✓	✓

Table 1220: Mapping between COs of LA 213 and (POs& PSOs)

MHA-101:Economics-II (Macroeconomic Analysis)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand economics terminology used in policy framework of any economy. Students will also understand how everyone can benefit when people trade with one another, and how to apply the theory of comparative advantage to everyday life and national policy.		✓				✓				✓		✓	✓
CO2:Understand the psychology of individual economic agents like consumers and producers and their respective choices in the market.		✓			✓	✓	✓					✓	✓
CO3:Learn about different types of costs and its significance in production process. The discussion of types of revenues will help students to understand the determination of maximum profit for any firm.	✓	✓	✓		✓	✓				✓		✓	✓
CO4:Learn about the different kinds of market structure and the behavior of firms in determination of price and output.	✓	✓	✓		✓	✓			✓			✓	✓
CO5:The overall awareness about the ways in which nations are compared. Students are made aware of the problems facing any economy and the government's policies and practical difficulties regarding the same.	✓	✓	✓		✓	✓						✓	✓

Table 1221: Mapping between COs of LC 222 and (POs& PSOs)

LC 222:Family Law – II (Mohammedan Law)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the origin and development, schools, and sources of mohammedan law.		✓			✓	✓						✓	✓
CO2:Understand the aspect of marriage, its type the legal effects and can get knowledge on concepts related to dower.	✓	✓			✓	✓				✓		✓	✓
CO3:Have broader understanding of Maintenance, wakf, pre-emption and guardianship.	✓	✓			✓	✓				✓		✓	✓
CO4:Understand provisions related to muslim gift, will and succession.	✓	✓	✓			✓						✓	✓
CO5:Understand the basic underlying principles under Muslim Personal Laws.	✓	✓	✓			✓						✓	✓

Table 1222: Mapping between COs of LC 223 and (POs& PSOs)

LC 223:Environmental Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the Concepts related to Environmental law such as Polluters pay principle, no fault liability etc.	✓		✓		✓	✓					✓		
CO2:Understand various environmental problems and subsequent conventions undertaken to trackle them.	✓		✓		✓		✓		✓	✓	✓	✓	
CO3:Understand International Framework on climate change.		✓	✓		✓		✓	✓		✓		✓	
CO4:Understand the various doctrines and the legal remedies available under IPC, Tort, CrPc etc.		✓	✓	✓	✓	✓	✓	✓		✓		✓	
CO5:Understand the basic underlying principles under the various conventions related to environmental laws.	✓	✓				✓	✓		✓	✓			✓

Table 1223: Mapping between COs of LA 231 and (POs& PSOs)

LA 231:History – III (International Affairs)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the World War regime, the international events leading to 1st world war.					✓				✓	✓			✓
CO2:Understand the causes of second world war and Emergence of third world.		✓			✓				✓	✓			✓
CO3:Understand the relations of India with other countries		✓				✓							✓
CO4:Understand the formation of united nations organisations and emergence of two power block.		✓						✓				✓	✓
CO5:Understand the concept of Globalization and its impact on third world countries.		✓				✓		✓				✓	✓

Table 1224: Mapping between COs of LA 232 and (POs& PSOs)

LA 232:Sociology- III													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the theories given by the Sociological thinkers such as Karl marx, Emiley Durkheim.			✓	✓	✓						✓	✓	✓
CO2:Analyse the various theories propounded by Charles Taylor, Herbert Marcuse and others.		✓			✓	✓						✓	✓
CO3:Analyse and understand the Contemporary feminist thinkers ideology.	✓	✓	✓		✓	✓						✓	✓
CO4:They will acquire an idea of gender inequality, gender oppression prevelant in society.	✓	✓			✓	✓			✓	✓		✓	
CO5:Analyse and understand the concept of cultural hybridization, cultural convergence.						✓						✓	

Table 1225: Mapping between COs of LA 233 and (POs& PSOs)

LA 233:Economics – III (Economic Development and Policy)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand and analyze various factors of economic growth.		✓				✓				✓		✓	✓
CO2:Analyze various issues related to public and private sector.		✓			✓	✓	✓					✓	✓
CO3:Understand the economic planning system in India and the importance of niti ayoga.	✓	✓	✓		✓	✓				✓		✓	✓
CO4:Analyze the relationship of India with international agencies such as IMF,WTO.	✓	✓	✓		✓	✓			✓			✓	✓
CO5:understand the economic reform and economic growth and analyze the structural adjustment programme.	✓	✓	✓		✓	✓						✓	✓

Table 1226: Mapping between COs of LC 302 and (POs& PSOs)

LC 302:Constitutional Law - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The student will get clear picture about the concept of rule of law and constitutionalism in a historical point of view.	✓		✓		✓	✓				✓		✓	✓
CO2:Students will understand Salient features of Indian constitution	✓		✓		✓	✓				✓		✓	✓
CO3:Students will have clarity about the concept of equality, its origin, development and its place in Indian Constitution.	✓		✓		✓	✓				✓		✓	✓
CO4:The students will have in depth understanding about fundament rights enshrined in the constitution and ground for their restrictions.	✓		✓		✓	✓				✓		✓	✓
CO5:The student will be able to narrate the importance of Directive Principles of State policy.	✓		✓		✓	✓				✓		✓	✓



Table 1227: Mapping between COs of LC 303 and (POs& PSOs)

LC 303:Criminal Procedure Code - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Learn the basic aspects of criminal procedure the nature, function and the other provisions relating to arrest of persons.	✓			✓			✓	✓		✓			
CO2:Acquaint with the ways by which law prevents starvation and vagrancy etc leading to commission of crimes.	✓	✓	✓	✓	✓	✓				✓		✓	✓
CO3:Understand how the Code has also made provisions for the prevention of crimes and how the complaint procedure is laid down.		✓	✓		✓	✓						✓	✓
CO4:Impart knowledge about various aspects of investigation, the procedure of charges and provisions relating to bail.	✓						✓	✓	✓	✓	✓	✓	✓
CO5:Understaning of various types of arrest, search and seizure under the Cr.PC.	✓						✓	✓	✓	✓	✓	✓	✓

Table 1228: Mapping between COs of LC 304 and (POs& PSOs)

LC 304:Indian Penal Code – I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The students will understand the conceptual foundations of crime laced with the basic underlying philosophy of the Indian Penal Code.	✓	✓	✓	✓	✓	✓	✓			✓			✓
CO2:The students will learn the nature and significance of punishment for the effective implementation of criminal law.	✓			✓		✓	✓		✓	✓	✓		✓
CO3:Student will understand the a very important, although not often emphasized, aspect of a crime viz. abetment.	✓					✓				✓		✓	✓
CO4:Dissemination of a concept that has gained importance of late, i.e., criminal conspiracy and offences against the State.	✓					✓				✓		✓	✓
CO5:The student will understand emphasizes on the various offences affecting public tranquility which is of vital importance for peace and order in the society.	✓	✓	✓	✓	✓	✓				✓		✓	✓

Table 1229: Mapping between COs of LC 305 and (POs& PSOs)

LC 305:Transfer of Property- I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On completion of the course students will be able to analyze the various terms that appears in the enactment so as to understand the objective of this Act better as well as for better understanding.	✓			✓		✓	✓	✓		✓		✓	✓
CO2:The students will understand certain basic principles underlying any kind of transfers. The module also deals with certain cardinal principles which has to be followed regarding transfer.	✓		✓				✓		✓	✓	✓		
CO3:Election is an important concept of Transfer where the non owner of the property gives an option to the owner of the property to exchange his property for a benefit which is a peculiar rule as only the owners have the right sell their property. The next module throws light on transfer for certain purposes and by certain owners.	✓		✓				✓		✓	✓	✓		
CO4:The student will deal with specific type of transfer that is through Sale and exchange. The students will know the rights and duties of the seller and the buyer before and after sale.	✓		✓				✓		✓	✓	✓		
CO5:On completion of the course students will be able to describe the different types of mortgage and their essentials, remedies available to the parties.	✓		✓	✓			✓	✓	✓	✓	✓	✓	✓

Table 1230: Mapping between COs of LO 306 and (POs& PSOs)

LO 306:Human Rights (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On completion of the module students will be able to connect the core concepts involved evolution and development of human rights worldwide, the nature of Human Rights and Group Rights	✓	✓	✓		✓	✓						✓	✓
CO2:Students will be able to understand the constitutional aspects along with the statutory framework of National and State Human Rights Commissions.	✓				✓			✓	✓	✓	✓		✓
CO3:Students will be able to understand the societal expectations in terms of human rights		✓		✓	✓	✓		✓		✓		✓	
CO4:Students will be able to comprehend the nuances of criminal infractions and the resultant rights abuse.		✓		✓	✓	✓		✓		✓		✓	
CO5:Students will be able to understand the role of state on some of the fundamental issues relating to the enforcement of human rights.	✓	✓	✓	✓	✓	✓				✓		✓	✓

Table 1231: Mapping between COs of LH 307 and (POs& PSOs)

LH 307:Law of Insurance (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the basic concept of insurance law, their essentials, and their principles.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO2:Analyze the legal characteristic of contract of insurance such as unilateral, personal and adhesion contract.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO3:Understand the formation establishment and working of IRDA.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO4:Analyze the concept of life insurance its objective, establishment and functions.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO5:Understand the fire and marine insurance its nature, concept and principles.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓

Table 1232: Mapping between COs of LH307A and (POs& PSOs)

LH307A:Criminology (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The student will be in a position to understand various theories of crime and can assess the impact on society.		✓	✓	✓		✓	✓					✓	✓
CO2:At the end of the semester the students will be able to understand the various victim compensation schemes.	✓			✓			✓	✓	✓	✓	✓	✓	✓
CO3:The juvenile justice scheme and its implementation.	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:They will also analyse the various punishment theories in a fair manner with the realms of protecting the rights of victims.	✓			✓			✓	✓	✓	✓	✓	✓	✓
CO5:They can implement various theories to eradicate the penance in the society.		✓	✓	✓		✓	✓					✓	✓

Table 1233: Mapping between COs of LH307B and (POs& PSOs)

LH307B:Legal Philosophy including theory of Justice (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Elucidate the nature, scope and development of legal philosophy	✓		✓		✓	✓	✓		✓	✓	✓	✓	✓
CO2:Understand the ideas and theories relating to law, society and people as propounded by the different schools of jurisprudence	✓				✓	✓						✓	✓
CO3:Understand the different legal concepts that form the basis of objective law making in modern legal systems	✓		✓	✓	✓	✓	✓		✓	✓	✓		✓
CO4:Analyze the concept of justice from theories of different jurists and philosophers	✓	✓	✓	✓			✓			✓		✓	✓
CO5:Explain justice as a means and an end for larger constitutional goals, through judicial process and activism.	✓	✓	✓	✓			✓		✓	✓		✓	✓

Table 1234: Mapping between COs of LH 307C and (POs& PSOs)

LH 307C:International Environmental Laws(Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify and describe relevant important sources and concepts pertaining to the international law system governing the environment.	✓		✓		✓	✓			✓				✓
CO2:Identify and analyse various regulations relating to transboundary environmental themes and the global commons.	✓		✓	✓					✓		✓		✓
CO3:Discuss the essence of State liability and State sovereignty in transboundary environmental issues.	✓	✓		✓	✓		✓		✓				✓
CO4:Describe the differences between international environmental governance and domestic regulation, and the interconnectivity between the two.	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓
CO5:This course examines the role of international law in addressing global environmental problems.	✓			✓	✓	✓	✓	✓	✓			✓	✓

Table 1235: Mapping between COs of LM 308 and (POs& PSOs)

LM 308:Moot Court													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On the conclusion of the Module, the students would be able to appreciate the research, oratorical and articulation skills required of a lawyer.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Students will be able to comprehend the practicalities of the justice system and the pivotal role the courts play in dispensation of justice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:They will also get a practical exposure to the techniques of client interviewing and the substantive as well as procedural steps involved in preparation of a brief by lawyers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Students will have practical experience of the professional aspects of the subjects they have studied.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:It will help students unearth their potential for the profession and the desirable improvements for the same.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1236: Mapping between COs of LP 309 and (POs& PSOs)

LP 309:Project and Report Presentation													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The student will have ample knowledge on the topic assigned.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:The students will analyze data and try to synthesize the available it.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:the students will demonstrate the understanding of ethical issues involved in the project report.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:The students will demonstrate capacity to improve by engagement and retention.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:The student will be able to demonstrate findings to advance research education theory and practice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1237: Mapping between COs of LC 322 and (POs& PSOs)

LC 322:Constitutional Law - II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the composition of parliament and will clear cut idea of different legislative bodies.	✓	✓	✓		✓	✓		✓		✓			✓
CO2:Give an insight to the different forms of Governments their features, merits and de-merits.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO3:Further, it enables the students to understand the judicial perspective over the Indian federalism.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO4:understand the composition features of election commission of india, emergency provision.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO5:understand the centre state relationship, provision of interstate trade and commerce.	✓	✓	✓		✓	✓		✓		✓		✓	✓

Table 1238: Mapping between COs of LC 323 and (POs& PSOs)

LC 323:Criminal Procedure Code -II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Acquaint with understanding of various forms of charges under the Cr.PC.	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO2:Acquaint the students to the provisions of charges and other provisions relating to bail procedure.	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO3:Deals with pronouncement of judgment and preferring appeal.	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO4:deals with process of reference, revision and transfer protect the life and liberty of the accused.	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO5:Teach students the process of execution of a sentence, suspension, remission and commutation of sentence etc once the trial court hands out a judgment.	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓

**Table 1239: Mapping between COs of LC 324 and (POs& PSOs)**

LC 324:Indian Penal Code – II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Learn about the various offences affecting human body including life.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Understand the concept of hurt, grievous hurt, wrongful restraint, Kidnapping.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:Analyze and understand the provisions of offences against property including theft, extortion,robbery, dacoity, mischief and criminal trespass.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Understanding the principles of biagamy, cruelty, unlawful marriages.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:Analyse and understand the concept of defamation, offences relating to marriage, criminal intimidation.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓

**Table 1240: Mapping between COs of LC 325 and (POs& PSOs)**

LC 325:Transfer of Property - II & Specific Relief													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand principles relating to mortgage, rights and liabilities of mortgager and mortgagee.	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
CO2:Understand the principles of Marshalling and contributions, redemption.	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
CO3:Understand the principles governing transfer of actionable claim, exchanges, gift.	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
CO4:Understand the intricacies of Specific relief act and contracts related to recovery of possession of movable property and immovable property.	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
CO5:Analyze the process of injunction, rectification of instrument, cancellation of instrument.	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓

**Table 1241: Mapping between COs of LO 326 and (POs& PSOs)**

LO 326:Interpretation of Statute (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand parts of a statute and the meaning of the term 'interpretation of statute'.	✓			✓		✓		✓	✓	✓			✓
CO2:To acquaint the students with the fundamental rules of interpretation of statutes.	✓			✓		✓		✓	✓	✓			✓
CO3:Acquaints the students with the role of different parts of a statutes in interpreting the same.	✓			✓		✓		✓	✓	✓			✓
CO4:Acquaint the students with the materials which can be used to interpret a statute and their respective roles.	✓			✓		✓		✓	✓	✓			✓
CO5:Introduce students with the presumptions applicable during the interpretation of statutes and their applicability and the provisions excluding the jurisdiction of courts..	✓			✓		✓		✓	✓	✓			✓

Table 1242: Mapping between COs of LH 327 and (POs& PSOs)

LH 327:Law of Carriage (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Learn about main contracts used in shipping sector, and how those are regulated.	✓		✓	✓		✓			✓	✓	✓		✓
CO2:Learn the legal framework for such contracts, how the different contracts are structured their subsequent liabilities and structure.	✓		✓	✓		✓			✓	✓	✓		✓
CO3:Understand the charter party agreement and bill of lading its kinds and features.	✓		✓	✓		✓			✓	✓	✓		✓
CO4:Understand the multi modal transport of goods and operators right liabilities and exemption.	✓		✓	✓		✓			✓	✓	✓		✓
CO5:Understand how these contracts are regulated in international conventions and national legislation.	✓		✓	✓		✓			✓	✓	✓		✓

Table 1243: Mapping between COs of LH 327A and (POs& PSOs)

LH 327A:The Socio Legal Dimension of Gender													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Describe and Analyze the true legal dimension of gender.	✓	✓	✓		✓			✓	✓	✓	✓		✓
CO2:Identify the Legislation which make similar provision with regards to gender equality.	✓	✓	✓		✓	✓		✓	✓	✓	✓		✓
CO3:Interpret the emerging trend in media and in respect of LGBT community.	✓	✓	✓	✓			✓		✓			✓	✓
CO4:They will understand the root of gender bias.	✓	✓	✓		✓	✓						✓	
CO5:They will acknowledge various law frameworks in giving justice to the society.	✓	✓	✓	✓	✓			✓	✓	✓	✓		✓

Table 1244: Mapping between COs of LH327B and (POs& PSOs)

LH327B:Affirmative Action and Disdriminative Justice													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the various kinds of special suit.		✓	✓		✓	✓		✓	✓	✓	✓	✓	
CO2:Use correct legal terminologies	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	
CO3:Describe the rules of pleadings and apply them correctly.	✓	✓	✓		✓		✓	✓		✓	✓	✓	
CO4:File execution proceedings in the civil courts.	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓
CO5:Apply the provisions of Limitation Act appropriately.	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓

Table 1245: Mapping between COs of LH 327C and (POs& PSOs)

LH 327C:International Trade Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On completion of this course the students will be able to appraise the WTO as an International institution	✓		✓		✓	✓	✓		✓		✓	✓	✓
CO2:They will understand its role in International trade.	✓		✓		✓	✓	✓		✓		✓	✓	✓
CO3:To analyze the various Trade Agreements and the Scope of WTO in the 21st century.	✓		✓		✓	✓	✓		✓		✓	✓	✓
CO4:To understand the core concepts of transnational transactions and their resolutions.	✓			✓				✓	✓	✓			✓
CO5:to critically examine the operation of international trade law in practical contexts.	✓			✓					✓	✓	✓		✓

Table 1246: Mapping between COs of LM 328 and (POs& PSOs)

LM 328:Moot Court													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On the conclusion of the Module, the students would be able to appreciate the research, oratorical and articulation skills required of a lawyer.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Students will be able to comprehend the practicalities of the justice system and the pivotal role the courts play in dispensation of justice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:They will also get a practical exposure to the techniques of client interviewing and the substantive as well as procedural steps involved in preparation of a brief by lawyers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Students will have practical experience of the professional aspects of the subjects they have studies.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:It will help students unearth their potential for the profession and the desirable improvements for the same.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1247: Mapping between COs of LP 329 and (POs& PSOs)

LP 329:Project and Report Presentation													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The student will have ample knowledge on the topic assigned.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:The students will analyze data and try to synthesize the available it.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:The students will demonstrate the understanding of ethical issues involved in the project report.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:The students will demonstrate capacity to improve by engagement and retention.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:The student will be able to demonstrate findings to advance research education theory and practice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓



Table 1248: Mapping between COs of LC 402 and (POs& PSOs)

LC 402:Civil Procedure Code - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the jurisdiction of the civil court wherein a matter will lie and will understand the concept of ressubjudice and resjudicata.	✓			✓	✓		✓		✓	✓	✓		✓
CO2:Use correct legal terminologies and understand pleadings, plaints, setoff, counterclaim.	✓			✓	✓		✓		✓	✓	✓		✓
CO3:Describe the rules of appearance and non appearance of parties and apply them correctly.	✓			✓	✓		✓		✓	✓	✓		✓
CO4:File execution proceedings in the civil courts.	✓			✓	✓		✓		✓	✓	✓		✓
CO5:Understand the interim orders passed in the case and will have idea of the trial procedure judgement and decree.	✓			✓	✓		✓		✓	✓	✓		✓

Table 1249: Mapping between COs of LC 403 and (POs& PSOs)

LC 403:Law of Evidence - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Elucidate the elementary principle of the Law of Evidence.	✓		✓	✓	✓	✓			✓	✓	✓		✓
CO2:Explain the important provisions of the Indian Evidence Act, 1872.	✓		✓	✓	✓	✓			✓	✓	✓		✓
CO3:Analyze between opinions, witnesses, and expert testimony and hearsay evidences.	✓		✓	✓	✓	✓			✓	✓	✓		✓
CO4:Make an argument for or against the admissibility of evidence including that which has been unlawfully obtained, that which may be more prejudicial than probative, previous sexual history, bad character, hearsay evidence, expert evidence and eyewitness identification evidence.	✓		✓	✓	✓	✓			✓	✓	✓		✓
CO5:Understand the Public and private document and statements of admission and confession.	✓		✓	✓	✓	✓			✓	✓	✓		✓

Table 1250: Mapping between COs of LC 404 and (POs& PSOs)

LC 404:Jurisprudence													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify and describe the concept, scope, and utility of jurisprudence.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO2:List out the essential characteristic and concept of natural law theory, historical school, philosophical school.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO3:Apply the Marxian concept of law correctly to legal problems	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO4:Analyse the Scandinavian realism and sociological concept.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO5:Evaluate as against other events of a similar nature and articulate the problem areas for the deficiency. Devise a correct way of handling the legal problem	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓

Table 1251: Mapping between COs of LO 405 and (POs& PSOs)

LO 405:Law relating to Banking and Negotiable Instruments (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the Banking structure in India from point of view of banker customer relationship, the role of RBI its power and functions.	✓		✓	✓			✓	✓		✓			✓
CO2:Draft arguments for and against Banking and Non-Banking Financial Companies	✓		✓	✓			✓	✓		✓			✓
CO3:Undertaking acquisition of undertaking, suspension of business and winding up of regulations.	✓		✓	✓			✓	✓		✓			✓
CO4:Draft arguments in matters covering negotiations, presentment, related to legal issues	✓		✓	✓			✓	✓		✓			✓
CO5:Drafting policies related to banking sector.	✓		✓	✓			✓	✓		✓			✓

Table 1252: Mapping between COs of LH 406 and (POs& PSOs)

LH 406:Health Law (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand and describe areas of health law and related issues.	✓	✓	✓		✓			✓		✓		✓	✓
CO2:Analyze lacuna within among the professional obligations of doctors and provides suitable remedies accordingly.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO3:To identify and synthesize various related provisions under constitution and other health related laws.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO4:Understand the concept of medical negligence, various errors and role of consent in medical practices.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO5:Discuss various remedies under criminal law and defences available in medical practitioner legal proceedings.	✓	✓	✓		✓	✓		✓		✓	✓	✓	✓

Table 1253: Mapping between COs of LH 407 and (POs& PSOs)

LH 407:White Collar Crime (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the meaning and nature of crimes.	✓		✓			✓				✓		✓	✓
CO2:Analyze economic offences vis-à-vis traditional crimes.	✓	✓	✓		✓	✓						✓	✓
CO3:Trace the steps involved in the commission of these offences to detect any future issues.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
CO4:Learn the procedure of filing a case on various economic offences.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
CO5:Critically evaluate India's position in context of international economic offences.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓

Table 1254: Mapping between COs of LH 406A and (POs& PSOs)

LH 406A:Merger & Acquisitions (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the different categories of mergers and acquisitions and the consequences of mergers and acquisitions.	✓		✓		✓	✓					✓		✓
CO2:List out the statutory basis of different routes in mergers and acquisitions and the role of regulatory agencies.	✓			✓		✓	✓	✓	✓	✓	✓	✓	✓
CO3:Apply the law and procedure of share acquisition of companies under the Companies Act,2013.	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
CO4:Analyse the procedural and substantive law applications of Mergers.	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
CO5:Evaluate as against other requirement of voluntary and compulsory disclosures during share acquisition and at the time of acquisition of voting rights.	✓			✓		✓	✓	✓	✓	✓	✓		✓

Table 1255: Mapping between COs of LH406B and (POs& PSOs)

LH406B:International Humanitarian Law (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the origin of humanitarianism while evaluating historical events like the Nuremberg and Tokyo tribunals.	✓		✓		✓	✓		✓	✓		✓		✓
CO2:List out the different sources of International Humanitarian law.	✓		✓	✓			✓	✓	✓		✓		✓
CO3:Apply the rules governing the conduct of hostilities such as the General Limitations on the methods and means of hostilities	✓	✓	✓	✓		✓						✓	
CO4:Propose a solution to the issues related to the system of protecting power which includes the ICRC, UN war crimes tribunals and International Criminal Court.	✓					✓		✓	✓		✓		✓
CO5:Identify and evaluate relevant ethical and moral issues in legal situations	✓	✓	✓	✓	✓		✓					✓	✓

Table 1256: Mapping between COs of LH406C and (POs& PSOs)

LH406C:Socio- Economic Offences (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Gather an overview of various corruption Practices and its prevention.	✓	✓				✓	✓		✓	✓	✓		✓
CO2:Know the various limitations with regards to these offences.	✓	✓	✓	✓	✓		✓		✓	✓	✓		✓
CO3:Evaluate and critically assess the impact of these practices	✓	✓	✓				✓		✓	✓	✓		✓
CO4:To Know the principles and how they are incorporated in the domestic regime.	✓	✓	✓	✓		✓		✓	✓	✓	✓		✓
CO5:Legal Control Mechanism to combat various socio-economic offences.	✓	✓		✓	✓				✓	✓	✓		✓

Table 1257: Mapping between COs of LH407A and (POs& PSOs)

LH407A:Corporate Governance (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the salient features of corporate governance mechanism.	✓		✓	✓							✓		
CO2:List out the important aspects with regard to auditors and other statutory compliances that companies have to follow.	✓	✓			✓	✓		✓		✓	✓	✓	✓
CO3:Apply various legal and regulatory restrictions and obligations vis-à-vis the Board and the individual	✓		✓		✓	✓			✓			✓	
CO4:Analyse the issues related to functioning of the corporate system as a mode of business organization.	✓			✓	✓	✓	✓	✓		✓	✓	✓	✓
CO5:Evaluate as against other the OECD principles.	✓		✓			✓			✓				✓

Table 1258: Mapping between COs of LH407B and (POs& PSOs)

LH407B:International Refugee Law (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Analyse the principles and process of refugee status determination.	✓		✓	✓					✓	✓			
CO2:Identify and describe the various concept taught in the respective module.	✓		✓	✓	✓	✓			✓	✓	✓	✓	✓
CO3:Compare, contrast and reflect on theoretical concepts underlying refugee protection and analyse such legal concepts.	✓						✓						✓
CO4:Describe and identify the legal principles and methods to ascertain refugee problems and apply the concept correctly to legal issues on the ground.	✓		✓	✓	✓	✓	✓	✓	✓			✓	✓
CO5:Evaluate the refugee protection as against protection of the other displaced groups and articulate the problem areas for the deficiency.	✓			✓	✓	✓				✓			✓

Table 1259: Mapping between COs of LH407C and (POs& PSOs)

LH407C:Gender Justice & Feminist (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Analyze the philosophical undercurrents of social security, constitutional provisions and developments at the international level.	✓	✓	✓		✓			✓		✓		✓	
CO2:Analyze the various concept relating to industrial dispute.	✓	✓	✓		✓	✓	✓			✓	✓	✓	
CO3:Discuss the intricacies involved in the payment of wages, especially the deductions.	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
CO4:Comprehend the legal provisions with regards to standing orders collective bargaining, .		✓	✓		✓	✓		✓		✓	✓	✓	✓
CO5:Apply the legal provisions in the contemporary debate on Employees Provident Fund and workers' vulnerability in India.	✓	✓		✓	✓	✓	✓			✓	✓	✓	✓

Table 1260: Mapping between COs of LCI 408 and (POs& PSOs)

LCI 408:Alternate Dispute Resolution (Clinical)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:To analyze various legal frameworks on arbitration, mediation, conciliation and negotiation.	✓	✓	✓	✓	✓	✓			✓	✓		✓	✓
CO2:To understand and analyze the international legal frame work on arbitration and conciliation.	✓	✓	✓	✓	✓	✓			✓	✓		✓	✓
CO3:To apply procedures of ADR mechanisms in simulation exercise	✓	✓		✓						✓		✓	
CO4:Understand arbitral proceedings, foreign award their execution and termination.	✓	✓	✓	✓	✓	✓					✓	✓	✓
CO5:Analyze the other ADR mechanism such as lokadalat, gram nyayalayas, consumer forums and counseling centres.	✓	✓	✓	✓	✓	✓					✓	✓	✓

Table 1261: Mapping between COs of LM 409 and (POs& PSOs)

LM 409:Moot Court													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On the conclusion of the Module, the students would be able to appreciate the research, oratorical and articulation skills required of a lawyer.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Students will be able to comprehend the practicalities of the justice system and the pivotal role the courts play in dispensation of justice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:They will also get a practical exposure to the techniques of client interviewing and the substantive as well as procedural steps involved in preparation of a brief by lawyers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Students will have practical experience of the professional aspects of the subjects they have studies.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:It will help students unearth their potential for the profession and the desirable improvements for the same.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1262: Mapping between COs of LP 410 and (POs& PSOs)

LP 410:Project and Report Presentation													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The student will have ample knowledge on the topic assigned.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:The students will analyze data and try to synthesize the available it.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:The students will demonstrate the understanding of ethical issues involved in the project report.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:The students will demonstrate capacity to improve by engagement and retention.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:The student will be able to demonstrate findings to advance research education theory and practice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1263: Mapping between COs of LC 422 and (POs& PSOs)

LC 422:Civil Procedure Code - II & The Limitation Act													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the various kinds of special suit.	✓		✓	✓		✓	✓			✓	✓		
CO2:Use correct legal terminologies.	✓		✓	✓		✓	✓	✓	✓	✓	✓		✓
CO3:Describe the rules of pleadings and apply them correctly.	✓			✓	✓	✓	✓			✓	✓	✓	✓
CO4:File execution proceedings in the civil courts.	✓	✓	✓	✓		✓	✓	✓		✓	✓		✓
CO5:Apply the provisions of Limitation Act appropriately.	✓	✓		✓	✓		✓			✓	✓	✓	✓

Table 1264: Mapping between COs of LC 423 and (POs& PSOs)

LC 423:Labour Law - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Analyze the philosophical undercurrents of social security, constitutional provisions and developments at the international level.	✓	✓	✓	✓	✓	✓		✓			✓	✓	
CO2:Analyze the various concept relating to industrial dispute.	✓	✓			✓	✓				✓	✓	✓	✓
CO3:Discuss the intricacies involved in the payment of wages, especially the deductions.	✓		✓	✓	✓						✓	✓	
CO4:Comprehend the legal provisions with regards to standing orders collective bargaining, .	✓		✓	✓			✓			✓	✓		✓
CO5:Apply the legal provisions in the contemporary debate on Employees Provident Fund and workers' vulnerability in India.	✓	✓	✓		✓	✓	✓			✓			✓

Table 1265: Mapping between COs of LC 424 and (POs& PSOs)

LC 424:Law of Evidence - II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Elucidate the elementary principle of the Law of Evidence such as burden of proof, presumption as to certain offences.	✓		✓	✓		✓	✓			✓	✓		✓
CO2:Explain the important provisions of the Indian Evidence Act, 1872 relating to estoppel, competency of witness and privileged communications.	✓		✓	✓		✓	✓			✓	✓		✓
CO3:Analyze between opinions, witnesses, and expert testimony and hearsay evidences.	✓		✓	✓		✓	✓			✓	✓		✓
CO4:understand the process of witness examination such as cross examination, re examination and examination of witnesses.	✓		✓	✓		✓	✓			✓	✓		✓
CO5:Apply illegally obtained evidence, burden of proof and privileges, and make an argument for or against the admissibility of evidence including that which has been unlawfully obtained, that which may be more prejudicial than probative, previous sexual history, bad character, hearsay evidence, expert evidence and eyewitness identification evidence.	✓		✓	✓		✓	✓			✓	✓		✓

Table 1266: Mapping between COs of LO 425 and (POs& PSOs)

LO 425:Competition Law (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:To provide an understanding of Competition law, together with the ability to subject it to critical, legal and economic analysis	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:To apply Competition Law principles to the given cases.	✓		✓	✓	✓	✓	✓			✓	✓	✓	
CO3:Rationalise and suggest solutions to the fundamental issues of competition law.	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
CO4:To identify anti-competitive agreements and suggest remedies.	✓	✓	✓	✓	✓	✓				✓		✓	✓
CO5:To explain pricing strategies and abuse of dominant position.	✓		✓		✓	✓	✓			✓	✓	✓	

Table 1267: Mapping between COs of LH 426 and (POs& PSOs)

LH 426:Information Technology Law and Cyber Crime (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Apply the provisions of Information Technology Act to understand digital signatures, electronic signature certificates their objectives and functions.	✓		✓	✓			✓			✓	✓		
CO2:Identify the need for regulation of Information technology and various regulatory models.	✓	✓	✓		✓	✓				✓	✓		✓
CO3:Evaluate as against others the interface between different human rights instruments and challenges faced by information technology.	✓	✓	✓		✓	✓		✓		✓	✓	✓	✓
CO4:Analyse the laws related to cyber defamation through information technology	✓		✓		✓	✓				✓			
CO5:propose a solution to privacy related issues due to use of computer technology and List out the legal challenges of the information society and the different forms of cyber crimes.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓



Table 1268: Mapping between COs of LH 427 and (POs& PSOs)

LH 427:Penology and Victimology (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The scientific study of criminology and concept of law relating to it and concept of law relating to it. Apart from these general principles in Criminology equally important place of criminal law in criminal science, nature and functions of criminal law.	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓
CO2:The clarity about logical structure of crime prevention and its implementation with judicial pronouncements	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
CO3:The administration of criminal justice system in India with critical analysis of legislative provisions along with its practical implementation.	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
CO4:The importance of the victim for an investigation and why they are important in the overall scheme of the crime. The reasons for slow development of victim scheme.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO5:The theoretical aspects of punishment give clarity to the students about the nature and purpose of punishment. Its proportionality with the crime and analysis of its deterrent effect on the criminals.	✓	✓			✓	✓				✓	✓	✓	✓

Table 1269: Mapping between COs of LH426A and (POs& PSOs)

LH426A:Bankruptcy & Insolvency (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:They will understand the insolvency and bankruptcy code, its power and functions.	✓		✓		✓	✓	✓				✓		✓
CO2:They will analyse various provision of companies law that deal with insolvency criteria and lays down the procedure to be followed.	✓		✓	✓		✓	✓	✓	✓		✓	✓	✓
CO3:They will have an understanding with regards to qualification,experience of Insolvency Professional.	✓	✓	✓		✓					✓		✓	✓
CO4:They will have understanding of process of Debt recovery through various means unfder the Acts.	✓		✓	✓	✓	✓		✓			✓		
CO5:The will analyse and understand the various acts their provision in relation to insolvency in India.	✓		✓		✓	✓	✓		✓	✓	✓	✓	

Table 1270: Mapping between COs of LH426B and (POs& PSOs)

LH426B:Fiscal Responsibility & Management(Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Introduction to the language and nuances of fiscal rules and responsibilities	✓		✓	✓		✓	✓		✓				✓
CO2:Appreciation of the structure of India's fiscal responsibility and management	✓	✓	✓	✓	✓	✓	✓		✓	✓			✓
CO3:Identification and understanding of the constitutional imperatives relating to fiscal responsibility as a state action	✓	✓			✓	✓	✓					✓	✓
CO4:Elucidation of the statutory framework for fiscal responsibility and budget management in India through the relevant legislation	✓		✓	✓			✓	✓	✓	✓	✓		✓
CO5:Analysis of the Indian scenario of fiscal responsibility and management and suggestions for better implementation of the laws	✓	✓	✓	✓	✓	✓	✓		✓	✓			✓

Table 1271: Mapping between COs of LH426C and (POs& PSOs)

LH426C:Private International Law(Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Distinguish between Public and Private international law.	✓		✓	✓	✓		✓		✓	✓		✓	✓
CO2:Understand and comprehend the legal effects of various treatise and policies.	✓	✓		✓	✓				✓	✓			✓
CO3:Examine the devolution of specialized institution exclusively maneuvered the Private International Law.	✓	✓		✓	✓	✓	✓	✓				✓	
CO4:Being familiar with legal terms, significant theories, and basic legal rules and principles of PIL	✓						✓		✓	✓	✓	✓	✓
CO5:They will Know about the PIL of some major countries abroad	✓		✓	✓	✓		✓					✓	✓

Table 1272: Mapping between COs of LH427A and (POs& PSOs)

LH427A:Law on Infrastructure Development(Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:They will understand Role of various private players and infrastructure project.	✓	✓	✓	✓									✓
CO2:They will analyse the role of government and FDI with regards to Infrastructure Project.	✓	✓			✓	✓	✓		✓	✓		✓	✓
CO3:They will understand various provision of offences, penalties, and procedure of resettlement.	✓		✓	✓	✓	✓		✓		✓	✓		✓
CO4:They will have understanding of Special Economic Zone and impact on infrastructural project.	✓			✓	✓		✓		✓		✓		✓
CO5:They will have understanding of drafting of the documents.	✓		✓		✓	✓				✓		✓	

Table 1273: Mapping between COs of LH427B and (POs& PSOs)

LH427B:Local Self Government and Panchayat System(Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Elucidate the elementary principle of the Law of Evidence such as burden of proof, presumption as to certain offences.	✓	✓	✓		✓	✓					✓		✓
CO2:Explain the important provisions of the Indian Evidence Act, 1872 relating to estoppel, competency of witness and privileged communications.	✓	✓	✓		✓	✓			✓	✓		✓	✓
CO3:Analyze between opinions, witnesses, and expert testimony and hearsay evidences.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
CO4:understand the process of witness examination such as cross examination, re examination and examination of witnesses.	✓			✓			✓	✓	✓	✓			✓
CO5:Apply illegally obtained evidence, burden of proof and privileges, and make an argument for or against the admissibility of evidence including that which has been unlawfully obtained, that which may be more prejudicial than probative, previous sexual history, bad character, hearsay evidence, expert evidence and eyewitness identification evidence.	✓			✓			✓	✓	✓	✓			✓

Table 1274: Mapping between COs of LH427C and (POs& PSOs)

LH427C:UNICITRAL Model Code(Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:They will understand and analyse International Commercial Arbitration.	✓	✓				✓					✓		
CO2:They will analyse the diversified work areas of UNCI-TRAL Model.	✓				✓	✓	✓	✓	✓	✓		✓	✓
CO3:They will understand about arbitral tribunal and its working.	✓		✓	✓		✓	✓			✓	✓	✓	✓
CO4:They will understand legislative provision of UNCI-TRAL Model and its working.	✓	✓	✓	✓	✓							✓	✓
CO5:They will analyse and understand about arbitral award, settlement proceeding and termination of proceeding.	✓					✓	✓				✓	✓	✓

Table 1275: Mapping between COs of LCI 428 and (POs& PSOs)

LCI 428:Drafting,Pleading and Conveyance (Clinical)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Draft the legal deeds/documents/pleadings flawlessly.	✓		✓	✓	✓	✓	✓		✓	✓	✓		
CO2:Appreciate the abstract concepts and put forth an effective argument in drafting of civil pleading.	✓		✓	✓			✓	✓	✓	✓	✓		
CO3:Identify the issues involved, collect appropriate evidence, get true and correct information.	✓		✓	✓		✓	✓		✓	✓	✓		
CO4:Draft the legal deeds and documents with precision by following the appropriate legal format.	✓		✓	✓		✓	✓	✓	✓	✓	✓		
CO5:Scrutinize the legal documents and deeds.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	

Table 1276: Mapping between COs of LM 429 and (POs& PSOs)

LM 429:Moot Court													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On the conclusion of the Module, the students would be able to appreciate the research, oratorical and articulation skills required of a lawyer.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Students will be able to comprehend the practicalities of the justice system and the pivotal role the courts play in dispensation of justice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:They will also get a practical exposure to the techniques of client interviewing and the substantive as well as procedural steps involved in preparation of a brief by lawyers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Students will have practical experience of the professional aspects of the subjects they have studies.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:It will help students unearth their potential for the profession and the desirable improvements for the same.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1277: Mapping between COs of LP 430 and (POs& PSOs)

LP 430:Project and Report Presentation													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The student will have ample knowledge on the topic assigned.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:The students will analyze data and try to synthesize the available it.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:The students will demonstrate the understanding of ethical issues involved in the project report.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:The students will demonstrate capacity to improve by engagement and retention.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:The student will be able to demonstrate findings to advance research education theory and practice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1278: Mapping between COs of LC 502 and (POs& PSOs)

LC 502:Administrative Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Discuss the basic doctrines of administrative law, to describe delegated legislation and quasi legislation, to discuss the concept and components of natural justice.	✓	✓	✓		✓	✓	✓		✓	✓	✓		✓
CO2:Explain the difference between discretionary functions and ministerial functions.	✓	✓	✓	✓	✓	✓		✓		✓	✓		✓
CO3:Enumerate grounds on which judiciary may review administrative actions and explain the related doctrines.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
CO4:Discuss the importance, merits and demerits of quasi-judicial bodies.	✓	✓	✓	✓	✓		✓			✓	✓		✓
CO5:Explain the grounds to obtain remedies against government.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓

Table 1279: Mapping between COs of LC 503 and (POs& PSOs)

LC 503:Company Law - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Appreciate the importance of business associations, history and regulatory framework relating to the same.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
CO2:Explain jurisprudential aspects of 'company' and classification of companies.	✓	✓			✓	✓				✓	✓	✓	
CO3:Elucidate the process of formation of different kinds of companies and commencement of business.	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
CO4:Describe the method of giving security for repayment of loan or other liabilities of a company.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
CO5:Evaluate ultra vires actions, consequences and remedies available to the companies and their agents	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓

Table 1280: Mapping between COs of LC 504 and (POs& PSOs)

LC 504:Labour Law - II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Explain the Employee compensation act ,its nature and objective along with the procedure to settle disputes.	✓	✓	✓	✓	✓	✓				✓	✓		✓
CO2:Identify and appreciate the need for a law relating to Payment of wages act and maternity benefit act in India the authorities under the act and the interpretation of important concepts.	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
CO3:Explain the paramount of Employee provident schemes, employee pension scheme.	✓	✓	✓			✓				✓	✓	✓	✓
CO4:Analyse the employee state insurance act and the authorities for adjudication of disputes and claims.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
CO5:Evaluate the significance of application of various provisions of payment of wages and deductions the authorities to hear claim and appeal.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓

Table 1281: Mapping between COs of LO 505 and (POs& PSOs)

LO 505:Law Relating to Patent (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the different forms of intellectual property and describe the importance of protection of Intellectual Property Right.	✓		✓		✓	✓				✓	✓		✓
CO2:List out the criteria/essential requirements of Patent protection, duration, rights conferred and remedies provided.	✓		✓		✓	✓				✓	✓		✓
CO3:Apply the principles of Patent protection to legal problems correctly.	✓	✓	✓	✓	✓	✓	✓			✓	✓		✓
CO4:Analyse the issues related to infringement of patent.	✓	✓	✓	✓	✓	✓	✓			✓	✓		✓
CO5:Evaluate as to the procedure to obtain patent in India.	✓	✓	✓	✓	✓	✓	✓			✓	✓		✓

Table 1282: Mapping between COs of LH 506 and (POs& PSOs)

LH 506:Law Relating to Women and Children (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the major social reforms during the 19 th century in India for the uplifting women.	✓	✓	✓	✓	✓				✓			✓	✓
CO2:List out the loopholes in law enforcement agencies in securing access to justice to women.	✓	✓	✓	✓	✓	✓			✓			✓	✓
CO3:Apply the different legislations enacted for women development and empowerment	✓		✓		✓	✓	✓		✓	✓	✓		✓
CO4:Analyse the issues related to violence against women under the Protection of Women from Domestic Violence Act, 2005.	✓		✓		✓	✓	✓		✓	✓	✓		✓
CO5:Evaluate as against other the impact of specificlaws enacted to secure justice to women against dowry related harassments, dowry deaths, molestation, sexual abuse and rape.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1283: Mapping between COs of LH506A and (POs& PSOs)

LH506A:Civil Society and Grievances (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:To provide an understanding of Competition law, together with the ability to subject it to critical, legal and economic analysis	✓	✓	✓		✓	✓						✓	✓
CO2:To apply Competition Law principles to the given cases.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:Rationalise and suggest solutions to the fundamental issues of competition law.	✓	✓		✓			✓	✓	✓	✓	✓	✓	
CO4:To identify anti-competitive agreements and suggest remedies.	✓		✓		✓	✓						✓	✓
CO5:To explain pricing strategies and abuse of dominant position.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1284: Mapping between COs of LH506B and (POs& PSOs)

LH506B:IMF & World Bank (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:They can understand the working of world bank	✓		✓	✓	✓								
CO2:They can understand the working and functioning of IDA, ICSID, MIGA	✓		✓	✓	✓	✓	✓		✓		✓		✓
CO3:They will gain knowledge with regards to composition and power of IMF.	✓		✓	✓						✓		✓	✓
CO4:They will learn about the process of Governance by IMF.	✓		✓	✓		✓	✓		✓	✓			✓
CO5:They will learn about the new reforms of world bank and IMF.	✓		✓	✓								✓	

Table 1285: Mapping between COs of LH506C and (POs& PSOs)

MHA-101:Indirect Taxes (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:At the end of the semester Student will have full fledged knowledge about the subject.	✓	✓	✓			✓	✓	✓	✓		✓		✓
CO2:This will help the student in knowing the various taxes and their usages.	✓			✓	✓	✓					✓	✓	
CO3:It will enhance the knowledge with regards to central excise, customs and sales act.	✓	✓	✓	✓			✓	✓		✓			
CO4:Understand the various fundamentals of tax system in India	✓	✓	✓		✓	✓						✓	✓
CO5:Understand the utility of service tax in India	✓	✓	✓	✓			✓		✓	✓			✓

Table 1286: Mapping between COs of LCl 507 and (POs& PSOs)

MHA-101:Professional Ethics and Professional Accounting System (Clinical)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the historical evolution of the legal profession as well as the various codes of conduct and ethical norms for the advocates.	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
CO2:To understand the contempt law in India and the classifications of contempt, the punishments and remedies etc.	✓		✓	✓	✓		✓	✓		✓	✓		
CO3:Understand practically the situations Involves case studies by the students and case presentations in the class.	✓		✓	✓	✓		✓	✓		✓	✓		✓
CO4:To acquaint students with general principles of accounting.	✓		✓	✓	✓		✓	✓		✓	✓		✓
CO5:To understand bar bench relationship, punishment for misconduct.	✓		✓	✓	✓		✓	✓		✓	✓		✓



Table 1287: Mapping between COs of LM 508 and (POs& PSOs)

LM 508:Moot Court													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On the conclusion of the Module, the students would be able to appreciate the research, oratorical and articulation skills required of a lawyer.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Students will be able to comprehend the practicalities of the justice system and the pivotal role the courts play in dispensation of justice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:They will also get a practical exposure to the techniques of client interviewing and the substantive as well as procedural steps involved in preparation of a brief by lawyers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Students will have practical experience of the professional aspects of the subjects they have studies.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:It will help students unearth their potential for the profession and the desirable improvements for the same.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1288: Mapping between COs of LP 509 and (POs& PSOs)

LP 509:Project and Report Presentation													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The student will have ample knowledge on the topic assigned.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:The students will analyze data and try to synthesize the available it.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:The students will demonstrate the understanding of ethical issues involved in the project report.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:The students will demonstrate capacity to improve by engagement and retention.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:The student will be able to demonstrate findings to advance research education theory and practice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1289: Mapping between COs of LC 522 and (POs& PSOs)

LC 522:Company Law - II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the powers of a Board vis-a-vis a General Meeting in view of statutory provisions and precedents.	✓	✓	✓		✓	✓				✓	✓		✓
CO2:Gives a bird's eye view of the composition and power equation of a Board and Inspection and Investigation of Board.	✓	✓	✓		✓	✓				✓	✓		✓
CO3:Gives aGive a comprehensive account of Meetings along with knowledge of Merger , Acqusion, Amalgamation. bird's eye view of the composition and power equation of a Board and Inspection and Investigation of Board.	✓	✓	✓		✓	✓				✓	✓		✓
CO4:Get a clear idea on emphasize on the liquidation of a company and winding up.	✓	✓	✓		✓	✓				✓	✓		✓
CO5:Understand the basic underlying principles of corporate law.	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓

Table 1290: Mapping between COs of LC 523 and (POs& PSOs)

LC 523:Principles of Taxation													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Describe the basic concepts relating to Income Tax Act, 1961 and GST Act, 2017	✓	✓	✓		✓	✓					✓		✓
CO2:Explain different types of incomes, their taxability, expenses and deductibility	✓		✓	✓		✓	✓	✓		✓	✓		✓
CO3:Interpret the provisions and cases relating to tax laws	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Learn various direct and indirect taxes and their implication in practical situations	✓	✓		✓		✓	✓	✓	✓	✓	✓		✓
CO5:Understand the basic underlying principles of Tax principles in India.	✓		✓		✓	✓				✓	✓		✓

Table 1291: Mapping between COs of LC 524 and (POs& PSOs)

LC 524:Public International Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Critically analyse various theories of International Law and sources of International Law.	✓		✓		✓	✓				✓	✓		✓
CO2:Critically analyse and interpret various Theories of Recognition Law of Treaties.	✓		✓		✓	✓				✓	✓		✓
CO3:Find out various complex issues in the International sphere and apply International Law principles to study such problems.	✓	✓	✓		✓	✓				✓	✓		✓
CO4:Analyse various diplomatic relations and the principles of extradition.	✓	✓	✓		✓	✓				✓	✓		✓
CO5:Critically analyse the role of Various specialized agencies and the role of ICJ in settling the disputes between nations amicably	✓	✓	✓		✓	✓				✓	✓		✓

Table 1292: Mapping between COs of LO 525 and (POs& PSOs)

LO 525:Law relating to Copyright & Trade Mark (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the different forms of intellectual property and describe their importance .	✓	✓	✓		✓	✓			✓		✓	✓	✓
CO2:List out the criteria/essential requirements of Assignment, Transmission, Licensing and Infringement.	✓			✓			✓	✓	✓	✓	✓		✓
CO3:Apply the principles of Trademark, collective mark and process of registration ..	✓			✓			✓	✓	✓	✓	✓		✓
CO4:Analyse the issues related to infringement of Copyright and Trademark.	✓	✓	✓	✓	✓	✓				✓		✓	✓
CO5:Propose a solution and remedies to the infringement problems in India.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓

Table 1293: Mapping between COs of LH 526 and (POs& PSOs)

LH 526:Investment Law (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Relate the history and evolution of investment law and to comment and evaluate the impact of investment commitments on domestic legal systems	✓	✓	✓		✓	✓		✓		✓			✓
CO2:Investigate and analyse problems, concepts and theories in relation to investment law and understanding the capital market.	✓		✓	✓			✓	✓	✓	✓	✓		
CO3:Analyse and explain the application of principles of investment law in the field of securities.	✓		✓	✓			✓	✓	✓	✓	✓		
CO4:Assess the soundness of the decision taken by SEBI and its regulatory mechanism.	✓			✓		✓	✓	✓	✓	✓			✓
CO5:Interpret the provisions of investment law with regards to Unit Trust of India and venture capital.	✓			✓		✓	✓	✓	✓	✓			✓

Table 1294: Mapping between COs of LH526A and (POs& PSOs)

LH526A:International Criminal Justice													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:They will understand concept and various sources of International Criminal Law.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓
CO2:They will understand the nature and forms of International crimes ,rights of accused and protection of victims.	✓	✓	✓		✓		✓		✓	✓		✓	✓
CO3:They will understand extradition act and prosecution procedure in international crime.	✓		✓	✓	✓				✓	✓	✓	✓	✓
CO4:They will understand and crime in Transnational Jurisdiction.	✓	✓				✓	✓		✓	✓	✓		✓
CO5:They will analyse and understand role of United Nation in preventing international crime.	✓	✓		✓	✓				✓	✓			✓

Table 1295: Mapping between COs of LH526B and (POs& PSOs)

LH526B:International Criminal Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:They will understand the criminal law proceedings in international perspective.	✓	✓	✓	✓	✓	✓	✓				✓	✓	
CO2:They will analyse various principles, treaties and convention of International Criminal Law	✓				✓			✓	✓	✓	✓		
CO3:They will understand the working of some special tribunal and Extraordinary courts.	✓		✓	✓		✓				✓			
CO4:They will understand ICL from Indian context and will be able to compare that with other countries	✓		✓		✓	✓	✓			✓	✓	✓	✓
CO5:	✓		✓		✓			✓					✓

Table 1296: Mapping between COs of LH526C and (POs& PSOs)

LH526C:Media & Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the concept of freedom of speech and expression in its domestic and international legal framework	✓		✓	✓	✓	✓						✓	✓
CO2:Elucidate the theories related to media, and rights and immunities available to the press and media	✓	✓		✓			✓	✓	✓	✓	✓		✓
CO3:Identify the restrictions on the freedom of press and media	✓	✓	✓	✓			✓		✓	✓	✓		✓
CO4:Identify and understand the statutory and regulatory framework for the rights and liabilities of the media	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
CO5:Understand the nuances of functionality of the media in particular political structures like a democracy	✓	✓	✓		✓	✓						✓	✓

Table 1297: Mapping between COs of LCI 527 and (POs& PSOs)

LCI 527:Moot Court Exercise and Internship (Clinical)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On the conclusion of the Module, the students would be able to appreciate the research, oratorical and articulation skills required of a lawyer.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Students will be able to comprehend the practicalities of the justice system and the pivotal role the courts play in dispensation of justice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:They will also get a practical exposure to the techniques of client interviewing and the substantive as well as procedural steps involved in preparation of a brief by lawyers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Students will have practical experience of the professional aspects of the subjects they have studies.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:It will help students unearth their potential for the profession and the desirable improvements for the same.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1298: Mapping between COs of LP 528 and (POs& PSOs)

LP 528:Seminar & Comprehensive Viva - Voice													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand and analyze the basic legal problems and do team work to solve them cooperatively with others on joint assignments.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Provide legal assistance either as paralegal volunteers or student volunteers to the common people about basic legal concepts which are essential in their day to day life.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:Learn to work with cultural diversity outside the class with a variety of ethnic, social, or educational backgrounds in the context of service motive.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:The students will demonstrate capacity to improve by engagement and retention.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:The student will be able to demonstrate findings to advance research education theory and practice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

### 11.3.2 B.BA.LL.B(H)

Table 1299: Mapping between COs of LE 101 and (POs& PSOs)

LE 101:English - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:To study and relate various writing formats		✓		✓		✓	✓		✓				✓
CO2:To understand and correspond ideas to the listeners.	✓	✓	✓		✓	✓	✓		✓	✓	✓		✓
CO3:Familiarize to a particular audience and purpose in academic writing.	✓	✓	✓		✓	✓	✓		✓		✓	✓	✓
CO4:To use Standard English grammar and effective sentence skills.	✓	✓	✓		✓	✓	✓				✓	✓	
CO5:Incorporate significant thinking in all steps of the process writing.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓

Table 1300: Mapping between COs of LC 102 and (POs& PSOs)

LC 102:Law of Contract-I (General Principles of Contract)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Explain the concepts in Contractual laws	✓		✓		✓	✓					✓		
CO2:Identify the general principles of Indian Contract Act, 1872	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO3:Apply the global business laws to current business environment	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
CO4:Analyse the principles of business and strategies adopted by firms	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	
CO5:Integrate concept of business law with foreign trade	✓	✓				✓	✓		✓	✓			✓

Table 1301: Mapping between COs of LC 103 and (POs& PSOs)

LC 103:Legal Method													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:To have basic understanding of the debates around the nature of law.	✓		✓	✓	✓	✓			✓	✓	✓		
CO2:To know the organization of the legal institutions and the hierarchy of courts in India.	✓	✓	✓		✓							✓	
CO3:To know the various theories propounded by jurists and to undertake and present research on such issues.	✓	✓	✓	✓	✓				✓			✓	
CO4:To know the various sources of law and be able to blend such sources and use them to formulate arguments in their research.	✓	✓	✓	✓	✓				✓			✓	
CO5:To know the fundamentals of law and its applications	✓	✓	✓		✓	✓					✓		

Table 1302: Mapping between COs of LB 108 and (POs& PSOs)

LB 108:Principles of Management													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the concepts related to Business.					✓				✓	✓			✓
CO2:Demonstrate the roles, skills and functions of management.		✓			✓				✓	✓			✓
CO3:Analyze effective application of PPM knowledge to diagnose and solve organizational problems and develop optimal managerial decisions.		✓				✓							✓
CO4:Understand the complexities associated with management of human resources		✓						✓				✓	✓
CO5:Understand the organizations and integrate the learning in handling these complexities.		✓				✓		✓				✓	✓

Table 1303: Mapping between COs of LB 109 and (POs& PSOs)

LB 109:Managerial Economics													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the roles of managers in firms		✓				✓			✓			✓	
CO2:Understand the internal and external decisions to be made by managers		✓	✓		✓	✓			✓			✓	
CO3:Analyze the demand and supply conditions and assess the position of a company	✓	✓		✓	✓	✓						✓	
CO4:Design competition strategies, including costing, pricing, product differentiation,and market environment according to the natures of products and the structures of the markets.		✓	✓	✓	✓	✓						✓	✓
CO5:Analyze real-world business problems with a systematic theoretical framework.		✓	✓	✓	✓	✓						✓	✓

Table 1304: Mapping between COs of LB 110 and (POs& PSOs)

LB 110:Business Mathematics and Statistics													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:perform percentage adjustments to common commercial situations including depreciation calculations and those requiring algebraic manipulation of formulae		✓				✓				✓		✓	✓
CO2:plot and interpret straight line graphs, apply them to business decision-making and discuss the significant features of non-linear graphs;		✓			✓	✓	✓					✓	✓
CO3:identify the role of statistics in business and the analytical tools available for making business decisions	✓	✓	✓		✓	✓				✓		✓	✓
CO4:demonstrate correct usage of measures of central tendency and measures of dispersion to describe data and perform analysis of data based on the results of these measures	✓	✓	✓		✓	✓			✓			✓	✓
CO5:use measures of association to evaluate statistical relationships between different factors and determine the validity of these results	✓	✓	✓		✓	✓						✓	✓

Table 1305: Mapping between COs of LE 121 and (POs& PSOs)

LE 121:English - II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:To improve the accuracy, fluency, in producing and understanding spoken and written English.		✓		✓		✓	✓		✓				✓
CO2:Develop the ability as critical readers and writers.	✓	✓	✓		✓	✓	✓		✓	✓	✓		✓
CO3:Enhance their presentation skills through participation in seminars and group discussions.	✓	✓	✓		✓	✓	✓		✓		✓	✓	✓
CO4:Enhance their vocabulary through one word substitute and pairs of word.	✓	✓	✓		✓	✓	✓				✓	✓	
CO5:Enhance their personality through effective communication.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓



**Table 1306: Mapping between COs of LC 122 and (POs& PSOs)**

LC 122:Law of Contract – II (Specific Contract)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Define distinguish and apply the basic concepts and terminologies of Law of Contract.	✓		✓		✓	✓					✓		
CO2:Define and Distinguish amongst the various processes involved in contract formation.	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO3:Identify the relevant legal issues that arise on a given set of facts in the area of contract law.	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
CO4:Understand the Contract of bailment, pledge and agency and the extent of these authorities and various doctrines related to these concepts.	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	
CO5:Understand the sales of goods act and partnership act their related doctrines and their outcomes.	✓	✓				✓	✓		✓	✓			✓

**Table 1307: Mapping between COs of LC 123 and (POs& PSOs)**

LC 123:Law of Torts –I and The Consumer Protection Act													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Analyze the foundational principles of tort law.	✓		✓		✓	✓					✓		
CO2:Apply tort law to complex problems using appropriate legal problem solving technique.	✓		✓		✓		✓		✓	✓	✓	✓	
CO3:Have a basic idea and understanding of Justification and liabilities in torts.		✓	✓		✓		✓	✓		✓		✓	
CO4:Have a clear understanding of Consumer Protection Act.		✓	✓	✓	✓	✓	✓	✓		✓		✓	
CO5:Have clear understanding as to vicarious liability strict and absolute liability and consumer protection act.	✓	✓				✓	✓		✓	✓			✓

**Table 1308: Mapping between COs of LB 128 and (POs& PSOs)**

LB 128:Financial and Cost Accounting													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Express the place and role of cost accounting in the modern economic environment					✓				✓	✓			✓
CO2:Select the costs according to their impact on business		✓			✓				✓	✓			✓
CO3:Differentiate methods of schedule costs per unit of production		✓				✓							✓
CO4:Differentiate methods of calculating stock consumption		✓						✓				✓	✓
CO5:Interpret the impact of the selected costs method		✓				✓		✓				✓	✓

Table 1309: Mapping between COs of LB 129 and (POs& PSOs)

LB 129:Management Information System													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Relate the basic concepts and technologies used in the field of management information systems		✓				✓			✓			✓	
CO2:Compare the processes of developing and implementing information systems		✓	✓		✓	✓			✓			✓	
CO3:Outline the role of the ethical, social, and security issues of information systems	✓	✓		✓	✓	✓						✓	
CO4:Translate the role of information systems in organizations, the strategic management processes, with the implications for the management		✓	✓			✓						✓	✓
CO5:Apply the understanding of how various information systems like DBMS work together to accomplish the information objectives of an organization		✓	✓	✓	✓	✓						✓	✓

Table 1310: Mapping between COs of LB 130 and (POs& PSOs)

LB 130:Economics Environment of Business													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Explain the concept of the various constituents of environment and their impact on businesses			✓	✓	✓						✓	✓	✓
CO2:Apply the trade theories , investment theories, exchange rate theories and regional trading bloc theories and their impact on economic welfare		✓			✓	✓						✓	✓
CO3:Analyse the principle and he different exchange rate regimes' impact on businesses	✓	✓	✓		✓	✓						✓	✓
CO4:Integrate the concept and opening economies of developing countries like India through RTB and multilateral route (WTO)	✓	✓			✓	✓			✓	✓		✓	
CO5:Understand the basic concepts of various business environment						✓						✓	

Table 1311: Mapping between COs of LC 202 and (POs& PSOs)

LC 202:Family Law- I (Hindu Law)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:connect the core concept relating to traditional law with the reformed modern Hindu law which is based on statutes		✓			✓	✓						✓	✓
CO2:Appraise on the nature of property transaction that exist in Hindu family relations and the importance of ancestral property and karta in hindu family	✓	✓			✓	✓				✓		✓	✓
CO3:Analyse and critically understand the concept of marriage and relate it to the changing nature of marriage as is witnessed today such as live-in relationships and recognition of same sex marriages	✓	✓			✓	✓				✓		✓	✓
CO4:Better understanding the core concepts of Hindu adoption laws. The complete subject will help students analyze it from sociological perspective thereby understanding	✓	✓	✓			✓						✓	✓
CO5:Appraise the law relating to guardianship and the importance of guardian in matter relating to wards	✓	✓	✓			✓						✓	✓

Table 1312: Mapping between COs of LC 203 and (POs& PSOs)

LC 203:Law of Torts-II and The Motor Vehicle Act													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Describe The provisions of the Motor Vehicles Acts relating to registration of motor vehicles.	✓		✓		✓	✓					✓		
CO2:Necessity of registration, Procedure for registration, No-objection certificate, Age limit for motor vehicles, Control of transport vehicles, Provisions relating to state transport undertakings, Construction, equipment and maintenance of motor vehicles, Control of traffic, Motor vehicles temporarily leaving or visiting India.	✓		✓		✓		✓		✓	✓	✓	✓	
CO3:Liability to pay compensation, permanent disablement, insurance of motor vehicles, against third party risks, Motor Vehicles Claims Tribunal, offences and penalties under the Act		✓	✓		✓		✓	✓		✓		✓	
CO4:To acquaint students with the different torts against persons and personal relationships and the circumstances in which a person is liable for committing such torts		✓	✓	✓	✓	✓	✓	✓		✓		✓	
CO5:Acquaint students with the different torts against properties and the circumstances in which a person is liable for committing such torts	✓	✓				✓	✓		✓	✓			✓

Table 1313: Mapping between COs of LB 208 and (POs& PSOs)

LB 208:Financial Management													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1: Demonstrate the applicability of the concept of Financial Management to understand the managerial Decisions and Corporate Capital Structure			✓	✓	✓						✓	✓	✓
CO2: Apply the Leverage and EBIT EPS Analysis associate with Financial Data in the corporate		✓			✓	✓						✓	✓
CO3: Analyse the complexities associated with management of cost of funds in the capital Structure	✓	✓	✓		✓	✓						✓	✓
CO4: Demonstrate how the concepts of financial management and investment, financing and dividend policy decisions could integrate while identification and resolution of problems pertaining to LSCM Sector	✓	✓			✓	✓			✓	✓		✓	
CO5: Demonstrate how risk is assessed						✓						✓	

Table 1314: Mapping between COs of LB 209 and (POs& PSOs)

LB 209:Organisational Behaviour In Mangament													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1: Demonstrate the applicability of the concept of organizational behavior to understand the behavior of people in the organization		✓				✓			✓			✓	
CO2: Demonstrate the applicability of analyzing the complexities associated with management of individual behavior in the organization		✓	✓		✓	✓			✓			✓	
CO3: Analyze the complexities associated with management of the group behavior in the organization	✓	✓		✓	✓	✓						✓	
CO4: Demonstrate how the organizational behavior can integrate in understanding the motivation (why) behind behavior of people in the organization		✓	✓	✓	✓	✓						✓	✓
CO5: Understand the basic concepts of Team development		✓	✓	✓	✓	✓						✓	✓

Table 1315: Mapping between COs of LB 210 and (POs& PSOs)

LB 210:Fundamental Human Resource Management													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:To develop the understanding of the concept of human resource management and to understand its relevance in organizations.		✓				✓				✓		✓	✓
CO2:To develop necessary skill set for application of various HR issues.		✓			✓	✓	✓					✓	✓
CO3:To develop necessary skill set for application of various HR issues.	✓	✓	✓		✓	✓				✓		✓	✓
CO4:To integrate the knowledge of HR concepts to take correct business decisions.	✓	✓	✓		✓	✓			✓			✓	✓
CO5:Understand the basic concepts of compensation and maintenance under HR	✓	✓	✓		✓	✓						✓	✓

Table 1316: Mapping between COs of LC 222 and (POs& PSOs)

LC 222:Family Law – II (Mohammedan Law)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the origin and development, schools, and sources of mohammedan law.		✓			✓	✓						✓	✓
CO2:Understand the aspect of marriage, its type the legal effects and can get knowledge on concepts related to dower.	✓	✓			✓	✓				✓		✓	✓
CO3:Have broader understanding of Maintenance, wakf, pre-emption and guardianship.	✓	✓			✓	✓				✓		✓	✓
CO4:Understand provisions related to muslim gift, will and succession	✓	✓	✓			✓						✓	✓
CO5:Understand provisions related to muslim gift, will and succession	✓	✓	✓			✓						✓	✓

Table 1317: Mapping between COs of LC 223 and (POs& PSOs)

LC 223:Environmental Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the Concepts related to Environmental law such as Polluters pay principle, no fault liability etc.	✓		✓		✓	✓					✓		
CO2: Understand various environmental problems and subsequent conventions undertaken to tackle them.	✓		✓		✓		✓		✓	✓	✓	✓	
CO3:Understand International Framework on climate change.		✓	✓		✓		✓	✓		✓		✓	
CO4:Understand the various doctrines and the legal remedies available under IPC, Tort, CrPc etc		✓	✓	✓	✓	✓	✓	✓		✓		✓	
"CO5:Understand the basic underlying principles under the various conventions related to environmental laws."	✓	✓				✓	✓		✓	✓			✓

Table 1318: Mapping between COs of LB 228 and (POs& PSOs)

LB 228:Marketing Management													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Formulate a marketing plan that will meet the needs or goals of a business or organization.					✓				✓	✓			✓
CO2:Develop an integrated marketing communications plan for a product, concept, good and/or service based on an identified market need or target.E616		✓			✓				✓	✓			✓
CO3:Formulate strategies for developing new and/or modified products, concepts, goods and services that respond to evolving market needs.		✓				✓							✓
CO4:Develop strategies for the efficient and effective placement/distribution of products, concepts, goods and services that respond to evolving markets.		✓						✓				✓	✓
CO5:Evaluate the impact of using different marketing strategies for a product, concept, good and/or service, on the finances, Return on Investment (ROI) and business goals of an organization.		✓				✓		✓				✓	✓

Table 1319: Mapping between COs of LB 229 and (POs& PSOs)

LB 229:Strategic Management													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Students will be able to describe major theories, background work, concepts and research output in the field of strategic management.			✓	✓	✓						✓	✓	✓
CO2:Students will demonstrate a clear understanding of the concepts, tools & techniques used by executives in developing and executing strategies and will appreciate its integrative and interdisciplinary nature.		✓			✓	✓						✓	✓
CO3:Students will be able to demonstrate effective application of concepts, tools & ample techniques to practical situations for diagnosing and solving organisational problems.	✓	✓	✓		✓	✓						✓	✓
CO4:Students will be able to demonstrate capability of making their own decisions in dynamic business landscape.	✓	✓			✓	✓			✓	✓		✓	
CO5:Students will be able to develop their capacity to think and execute strategically						✓						✓	

Table 1320: Mapping between COs of LB 230 and (POs& PSOs)

LB 230:Business Ethics and Corporate Social Responsibility													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The foundations for the major ethical schools of thought The ethical implications of business policies and decisions		✓				✓				✓		✓	✓
CO2:The importance of different perspectives of CSR in the business world		✓			✓	✓	✓					✓	✓
CO3:The importance of making informed, practical judgments based upon knowledge of sound ethical principles and motivations	✓	✓	✓		✓	✓				✓		✓	✓
CO4:The frameworks for analysing different stakeholders in and around companies at national and global level	✓	✓	✓		✓	✓			✓			✓	✓
CO5:The role of different stakeholders with regards to national systems of employment relations	✓	✓	✓		✓	✓						✓	✓

Table 1321: Mapping between COs of LC 302 and (POs& PSOs)

LC 302:Constitutional Law - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The student will get clear picture about the concept of rule of law and constitutionalism in a historical point of view.	✓		✓		✓	✓				✓		✓	✓
CO2:Students will understand Salient features of Indian constitution	✓		✓		✓	✓				✓		✓	✓
CO3:Students will have clarity about the concept of equality, its origin, development and its place in Indian Constitution.	✓		✓		✓	✓				✓		✓	✓
CO4:The students will have in depth understanding about fundament rights enshrined in the constitution and ground for their restrictions.	✓		✓		✓	✓				✓		✓	✓
CO5:The student will be able to narrate the importance of Directive Principles of State policy.	✓		✓		✓	✓				✓		✓	✓

Table 1322: Mapping between COs of LC 303 and (POs& PSOs)

LC 303:Criminal Procedure Code - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Learn the basic aspects of criminal procedure the nature, function and the other provisions relating to arrest of persons	✓			✓			✓	✓		✓			
CO2:Acquaint with the ways by which law prevents starvation and vagrancy etc leading to commission of crimes	✓	✓	✓	✓	✓	✓				✓		✓	✓
CO3:Understand how the Code has also made provisions for the prevention of crimes and how the complaint procedure is laid down		✓	✓		✓	✓						✓	✓
CO4:Impart knowledge about various aspects of investigation, the procedure of charges and provisions relating to bail	✓						✓	✓	✓	✓	✓	✓	✓
CO5:Understanding of various types of arrest, search and seizure under the Cr.PC	✓						✓	✓	✓	✓	✓	✓	✓

Table 1323: Mapping between COs of LC 304 and (POs& PSOs)

LC 304:Indian Penal Code – I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The students will understand the conceptual foundations of crime laced with the basic underlying philosophy of the Indian Penal Code.	✓	✓	✓	✓	✓	✓	✓			✓			✓
CO2:The students will learn the nature and significance of punishment for the effective implementation of criminal law.	✓			✓		✓	✓		✓	✓	✓		✓
CO3:Student will understand the a very important, although not often emphasized, aspect of a crime viz. abetment.	✓					✓				✓		✓	✓
CO4:Dissemination of a concept that has gained importance of late, i.e., criminal conspiracy and offences against the State.	✓					✓				✓		✓	✓
CO5:The student will understand emphasizes on the various offences affecting public tranquility which is of vital importance for peace and order in the society.	✓	✓	✓	✓	✓	✓				✓		✓	✓



Table 1324: Mapping between COs of LC 305 and (POs& PSOs)

LC 305:Transfer of Property- I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On completion of the course students will be able to analyze the various terms that appears in the enactment so as to understand the objective of this Act better as well as for better understanding.	✓			✓		✓	✓	✓		✓		✓	✓
CO2:The students will understand certain basic principles underlying any kind of transfers. The module also deals with certain cardinal principles which has to be followed regarding transfer.	✓		✓				✓		✓	✓	✓		
CO3:Election is an important concept of Transfer where the non owner of the property gives an option to the owner of the property to exchange his property for a benefit which is a peculiar rule as only the owners have the right sell their property. The next module throws light on transfer for certain purposes and by certain owners.	✓		✓				✓		✓	✓	✓		
CO4:The student will deal with specific type of transfer that is through Sale and exchange. The students will know the rights and duties of the seller and the buyer before and after sale	✓		✓				✓		✓	✓	✓		
CO5:On completion of the course students will be able to describe the different types of mortgage and their essentials, remedies available to the parties	✓		✓	✓			✓	✓	✓	✓	✓	✓	✓

Table 1325: Mapping between COs of LO 306 and (POs& PSOs)

LO 306:Human Rights (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On completion of the module students will be able to connect the core concepts involved evolution and development of human rights worldwide, the nature of Human Rights and Group Rights.	✓	✓	✓		✓	✓						✓	✓
"CO2:Students will be able to understand the constitutional aspects along with the statutory framework of National and State Human Rights Commissions. "	✓				✓			✓	✓	✓	✓		✓
CO3:Students will be able to understand the societal expectations in terms of human rights		✓		✓	✓	✓		✓		✓		✓	
CO4:Students will be able to comprehend the nuances of criminal infractions and the resultant rights abuse.		✓		✓	✓	✓		✓		✓		✓	
CO5:Students will be able to understand the role of state on some of the fundamental issues relating to the enforcement of human rights.	✓	✓	✓	✓	✓	✓				✓		✓	✓

Table 1326: Mapping between COs of LH 307 and (POs& PSOs)

LH 307:Law of Insurance (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the basic concept of insurance law, their essentials, and their principles.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO2:Analyze the legal characteristic of contract of insurance such as unilateral, personal and adhesion contract.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO3:Understand the formation establishment and working of IRDA.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO4:Analyze the concept of life insurance its objective, establishment and functions.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO5:Understand the fire and marine insurance its nature, concept and principles.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓

Table 1327: Mapping between COs of LH307A and (POs& PSOs)

LH307A:Criminology (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The student will be in a position to understand various theories of crime and can assess the impact on society.		✓	✓	✓		✓	✓					✓	✓
CO2:At the end of the semester the students will be able to understand the various victim compensation schemes.	✓			✓			✓	✓	✓	✓	✓	✓	✓
CO3:The juvenile justice scheme and its implementation.	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:They will also analyse the various punishment theories in a fair manner with the realms of protecting the rights of victims.	✓			✓			✓	✓	✓	✓	✓	✓	✓
CO5:They can implement various theories to eradicate the penance in the society.		✓	✓	✓		✓	✓					✓	✓

Table 1328: Mapping between COs of LH307B and (POs& PSOs)

LH307B:Legal Philosophy including theory of Justice (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Elucidate the nature, scope and development of legal philosophy	✓		✓		✓	✓	✓		✓	✓	✓	✓	✓
CO2:Understand the ideas and theories relating to law, society and people as propounded by the different schools of jurisprudence	✓				✓	✓						✓	✓
CO3:Understand the different legal concepts that form the basis of objective law making in modern legal systems	✓		✓	✓	✓	✓	✓		✓	✓	✓		✓
CO4:Analyze the concept of justice from theories of different jurists and philosophers	✓	✓	✓	✓			✓			✓		✓	✓
CO5:Explain justice as a means and an end for larger constitutional goals, through judicial process and activism.	✓	✓	✓	✓			✓		✓	✓		✓	✓

Table 1329: Mapping between COs of LH 307C and (POs& PSOs)

LH 307C:International Environmental Laws(Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify and describe relevant important sources and concepts pertaining to the international law system governing the environment.	✓		✓		✓	✓			✓				✓
CO2:Identify and analyse various regulations relating to transboundary environmental themes and the global commons.	✓		✓	✓					✓		✓		✓
CO3:Discuss the essence of State liability and State sovereignty in transboundary environmental issues.	✓	✓		✓	✓		✓		✓				✓
CO4:Describe the differences between international environmental governance and domestic regulation, and the interconnectivity between the two.	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓
CO5:This course examines the role of international law in addressing global environmental problems.	✓			✓	✓	✓	✓	✓	✓			✓	✓

Table 1330: Mapping between COs of LM 308 and (POs& PSOs)

LM 308:Moot Court													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On the conclusion of the Module, the students would be able to appreciate the research, oratorical and articulation skills required of a lawyer.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Students will be able to comprehend the practicalities of the justice system and the pivotal role the courts play in dispensation of justice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:They will also get a practical exposure to the techniques of client interviewing and the substantive as well as procedural steps involved in preparation of a brief by lawyers. Students will have practical experience of the professional aspects of the subjects they have studied.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Students will have practical experience of the professional aspects of the subjects they have studied.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:It will help students unearth their potential for the profession and the desirable improvements for the same.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1331: Mapping between COs of LP 309 and (POs& PSOs)

LP 309:Project and Report Presentation													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The student will have ample knowledge on the topic assigned.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:The students will analyze data and try to synthesize the available it.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:the students will demonstrate the understanding of ethical issues involved in the project report.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:The students will demonstrate capacity to improve by engagement and retention.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:The student will be able to demonstrate findings to advance research education theory and practice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1332: Mapping between COs of LC 322 and (POs& PSOs)

LC 322:Constitutional Law - II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the composition of parliament and will clear cut idea of different legislative bodies.	✓	✓	✓		✓	✓		✓		✓			✓
CO2:Give an insight to the different forms of Governments their features, merits and de-merits.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO3:Further, it enables the students to understand the judicial perspective over the Indian federalism.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO4:understand the composition features of election commission of india, emergency provision.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO5:understand the centre state relationship, provision of interstate trade and commerce.	✓	✓	✓		✓	✓		✓		✓		✓	✓

Table 1333: Mapping between COs of LC 323 and (POs& PSOs)

LC 323:Criminal Procedure Code -II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Acquaint with understanding of various forms of charges under the Cr.PC.	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO2:Acquaint the students to the provisions of charges and other provisions relating to bail procedure.	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO3:Deals with pronouncement of judgment and preferring appeal.	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO4:deals with process of reference, revision and transfer protect the life and liberty of the accused.	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO5:Teache students the process of execution of a sentence, suspension, remission & commutation of sentence etc once the trial court hands out a judgment.	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓

Table 1334: Mapping between COs of LC 324 and (POs& PSOs)

LC 324:Indian Penal Code – II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Learn about the various offences affecting human body including life.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Understand the concept of hurt, grievous hurt, wrongful restraint, Kidnapping.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:Analyze and understand the provisions of offences against property including theft, extortion,robbery, dacoity, mischief and criminal trespass.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Understanding the principles of biagamy, cruelty, unlawful marriages.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:analyse and understand the concept of defamation, offences relating to marriage, criminal intimidation.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1335: Mapping between COs of LC 325 and (POs& PSOs)

LC 325:Transfer of Property - II and Specific Relief													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand principles relating to mortgage, rights and liabilities of mortgager and mortgagee.	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
CO2:Understand the principles of Marshalling and contributions, redemption.	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
CO3:Understand the principles governing transfer of actionable claim, exchanges, gift.	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
CO4:Understand the intricacies of Specific relief act and contracts related to recovery of possession of movable property and immovable property.	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
CO5:Analyze the process of injunction, rectification of instrument, cancellation of instrument.	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓

Table 1336: Mapping between COs of LO 326 and (POs& PSOs)

LO 326:Interpretation of Statute (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand parts of a statute and the meaning of the term 'interpretation of statutes	✓			✓		✓		✓	✓	✓			✓
CO2:To acquaint the students with the fundamental rules of interpretation of statutes	✓			✓		✓		✓	✓	✓			✓
CO3:Acquaints the students with the role of different parts of a statutes in interpreting the same	✓			✓		✓		✓	✓	✓			✓
CO4:Acquaint the students with the materials which can be used to interpret a statute and their respective roles	✓			✓		✓		✓	✓	✓			✓
CO5:Introduce students with the presumptions applicable during the interpretation of statutes and their applicability and the provisions excluding the jurisdiction of courts	✓			✓		✓		✓	✓	✓			✓

**Table 1337: Mapping between COs of LH 327 and (POs& PSOs)**

LH 327:Law of Carriage (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:learn about main contracts used in shipping sector, and how those are regulated.	✓		✓	✓		✓			✓	✓	✓		✓
CO2:learn the legal framework for such contracts, how the different contracts are structured their subsequent liabilities and structure.	✓		✓	✓		✓			✓	✓	✓		✓
CO3:Understand the charter party agreement and bill of lading its kinds and features.	✓		✓	✓		✓			✓	✓	✓		✓
CO4:Understand the multi modal transport of goods and operators right liabilities and exemption.	✓		✓	✓		✓			✓	✓	✓		✓
CO5:Understand how these contracts are regulated in international conventions and national legislation.	✓		✓	✓		✓			✓	✓	✓		✓

**Table 1338: Mapping between COs of LH 327A and (POs& PSOs)**

LH 327A:The Socio Legal Dimension of Gender													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Describe and Analyze the true legal dimension of gender.	✓	✓	✓		✓			✓	✓	✓	✓		✓
CO2:Identify the Legislation which make similar provision with regards to gender equality.	✓	✓	✓		✓	✓		✓	✓	✓	✓		✓
CO3:Interpret the emerging trend in media and in respect of LGBT community.	✓	✓	✓	✓			✓		✓			✓	✓
CO4:They will understand the root of gender bias.	✓	✓	✓		✓	✓						✓	
CO5:They will acknowledge various law frameworks in giving justice to the society.	✓	✓	✓	✓	✓			✓	✓	✓	✓		✓

**Table 1339: Mapping between COs of LH327B and (POs& PSOs)**

LH327B:Affirmative Action and Disdriminative Justice													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the various kinds of special suit.		✓	✓		✓	✓		✓	✓	✓	✓	✓	
CO2:Use correct legal terminologies.	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	
CO3:Describe the rules of pleadings and apply them correctly.	✓	✓	✓		✓		✓	✓		✓	✓	✓	
CO4:File execution proceedings in the civil courts.	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓
CO5:Apply the provisions of Limitation Act appropriately.	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓

Table 1340: Mapping between COs of LH 327C and (POs& PSOs)

LH 327C:International Trade Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On completion of this course the students will be able to appraise the WTO as an International institution	✓		✓		✓	✓	✓		✓		✓	✓	✓
CO2:They will understand its role in International trade.	✓		✓		✓	✓	✓		✓		✓	✓	✓
CO3:To analyze the various Trade Agreements and the Scope of WTO in the 21st century.	✓		✓		✓	✓	✓		✓		✓	✓	✓
CO4:To understand the core concepts of transnational transactions and their resolutions.	✓			✓				✓	✓	✓			✓
CO5:to critically examine the operation of international trade law in practical contexts.	✓			✓					✓	✓	✓		✓

Table 1341: Mapping between COs of LM 328 and (POs& PSOs)

LM 328:Moot Court													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On the conclusion of the Module, the students would be able to appreciate the research, oratorical and articulation skills required of a lawyer.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Students will be able to comprehend the practicalities of the justice system and the pivotal role the courts play in dispensation of justice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:They will also get a practical exposure to the techniques of client interviewing and the substantive as well as procedural steps involved in preparation of a brief by lawyers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Students will have practical experience of the professional aspects of the subjects they have studies.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:It will help students unearth their potential for the profession and the desirable improvements for the same.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1342: Mapping between COs of LP 329 and (POs& PSOs)

LP 329:Project and Report Presentation													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The student will have ample knowledge on the topic assigned.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:The students will analyze data and try to synthesize the available it.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:the students will demonstrate the understanding of ethical issues involved in the project report.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:The students will demonstrate capacity to improve by engagement and retention.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:The student will be able to demonstrate findings to advance research education theory and practice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1343: Mapping between COs of LC 402 and (POs& PSOs)

LC 402:Civil Procedure Code - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the jurisdiction of the civil court wherein a matter will lie and will understand the concept of ressubjudice and resjudicata.	✓			✓	✓		✓		✓	✓	✓		✓
CO2:Use correct legal terminologies and understand pleadings, plaints, setoff, counterclaim.	✓			✓	✓		✓		✓	✓	✓		✓
CO3:Describe the rules of appearance and non appearance of parties and apply them correctly.	✓			✓	✓		✓		✓	✓	✓		✓
CO4:File execution proceedings in the civil courts.	✓			✓	✓		✓		✓	✓	✓		✓
CO5:Understand the interim orders passed in the case and will have idea of the trial procedure judgement and decree	✓			✓	✓		✓		✓	✓	✓		✓

Table 1344: Mapping between COs of LC 403 and (POs& PSOs)

LC 403:Law of Evidence - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Elucidate the elementary principle of the Law of Evidence.	✓		✓	✓	✓	✓			✓	✓	✓		✓
CO2:Explain the important provisions of the Indian Evidence Act, 1872.	✓		✓	✓	✓	✓			✓	✓	✓		✓
CO3:Analyze between opinions, witnesses, and expert testimony and hearsay evidences.	✓		✓	✓	✓	✓			✓	✓	✓		✓
CO4:Make an argument for or against the admissibility of evidence including that which has been unlawfully obtained, that which may be more prejudicial than probative, previous sexual history, bad character, hearsay evidence, expert evidence and eyewitness identification evidence.	✓		✓	✓	✓	✓			✓	✓	✓		✓
CO5:Understand the Public and private document and statements of admission and confession.	✓		✓	✓	✓	✓			✓	✓	✓		✓



Table 1345: Mapping between COs of LC 404 and (POs& PSOs)

LC 404:Jurisprudence													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify and describe the concept, scope, and utility of jurisprudence.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO2:List out the essential characteristic and concept of natural law theory, historical school, philosophical school.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO3:Apply the Marxian concept of law correctly to legal problems	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO4:Analyse the Scandinavian realism and sociological concept.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO5:Evaluate as against other events of a similar nature and articulate the problem areas for the deficiency. Devise a correct way of handling the legal problem	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓

Table 1346: Mapping between COs of LO 405 and (POs& PSOs)

LO 405:Law relating to Banking and Negotiable Instruments (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the Banking structure in India from point of view of banker customer relationship, the role of RBI its power and functions.	✓		✓	✓			✓	✓		✓			✓
CO2:Draft arguments for and against Banking and Non-Banking Financial Companies	✓		✓	✓			✓	✓		✓			✓
CO3:Undertaking acquisition of undertaking, suspension of business and winding up of regulations.	✓		✓	✓			✓	✓		✓			✓
CO4:Draft arguments in matters covering negotiations, presentment, related to legal issues	✓		✓	✓			✓	✓		✓			✓
CO5:Drafting policies related to banking sector.	✓		✓	✓			✓	✓		✓			✓

Table 1347: Mapping between COs of LH 406 and (POs& PSOs)

LH 406:Health Law (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand and describe areas of health law and related issues.	✓	✓	✓		✓			✓		✓		✓	✓
CO2:Analyze lacuna within among the professional obligations of doctors and provides suitable remedies accordingly.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO3:To identify and synthesize various related provisions under constitution and other health related laws.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO4:Understand the concept of medical negligence, various errors and role of consent in medical practices.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO5:Discuss various remedies under criminal law and defences available in medical practionerin legal proceedings.	✓	✓	✓		✓	✓		✓		✓	✓	✓	✓

Table 1348: Mapping between COs of LH 407 and (POs& PSOs)

LH 407:White Collar Crime (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the meaning and nature of crimes.	✓		✓			✓				✓		✓	✓
CO2:Analyze economic offences vis-à-vis traditional crimes.	✓	✓	✓		✓	✓						✓	✓
CO3:Trace the steps involved in the commission of these offences to detect any future issues.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
CO4:Learn the procedure of filing a case on various economic offences.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
CO5:Critically evaluate India's position in context of international economic offences.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓

Table 1349: Mapping between COs of LH 406A and (POs& PSOs)

LH 406A:Merger and Acquisitions (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the different categories of mergers and acquisitions and the consequences of mergers and acquisitions.	✓		✓		✓	✓					✓		✓
CO2:List out the statutory basis of different routes in mergers and acquisitions and the role of regulatory agencies.	✓			✓		✓	✓	✓	✓	✓	✓	✓	✓
CO3:Apply the law and procedure of share acquisition of companies under the Companies Act,2013.	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
CO4:Analyse the procedural and substantive law applications of Mergers.	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
CO5:Evaluate as against other requirement of voluntary and compulsory disclosures during share acquisition and at the time of acquisition of voting rights.	✓			✓		✓	✓	✓	✓	✓	✓		✓

Table 1350: Mapping between COs of LH406B and (POs& PSOs)

LH406B:International Humanitarian Law (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the origin of humanitarianism while evaluating historical events like the Nuremberg and Tokyo tribunals.	✓		✓		✓	✓		✓	✓		✓		✓
CO2:List out the different sources of International Humanitarian law.	✓		✓	✓			✓	✓	✓		✓		✓
CO3:Apply the rules governing the conduct of hostilities such as the General Limitations on the methods and means of hostilities	✓	✓	✓	✓		✓						✓	
CO4:Propose a solution to the issues related to the system of protecting power which includes the ICRC, UN war crimes tribunals and International Criminal Court.	✓					✓		✓	✓		✓		✓
CO5:Identify and evaluate relevant ethical and moral issues in legal situations	✓	✓	✓	✓	✓		✓					✓	✓

Table 1351: Mapping between COs of LH406C and (POs& PSOs)

LH406C:Socio- Economic Offences (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Gather an overview of various corruption Practices and its prevention.	✓	✓				✓	✓		✓	✓	✓		✓
CO2:Know the various limitations with regards to these offences.	✓	✓	✓	✓	✓		✓		✓	✓	✓		✓
CO3:Evaluate and critically assess the impact of these practices	✓	✓	✓				✓		✓	✓	✓		✓
CO4:To Know the principles and how they are incorporated in the domestic regime.	✓	✓	✓	✓		✓		✓	✓	✓	✓		✓
CO5:Legal Control Mechanism to combat various socio-economic offences.	✓	✓		✓	✓				✓	✓	✓		✓

Table 1352: Mapping between COs of LH407A and (POs& PSOs)

LH407A:Corporate Governance (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the salient features of corporate governance mechanism	✓		✓	✓							✓		
CO2:List out the important aspects with regard to auditors and other statutory compliances that companies have to follow	✓	✓			✓	✓		✓		✓	✓	✓	✓
CO3:Apply various legal and regulatory restrictions and obligations vis-à-vis the Board and the individual directors	✓		✓		✓	✓			✓			✓	
CO4:Analyse the issues related to functioning of the corporate system as a mode of business organization	✓			✓	✓	✓	✓	✓		✓	✓	✓	✓
CO5:Evaluate as against other the OECD principles	✓		✓			✓			✓				✓

Table 1353: Mapping between COs of LH407B and (POs& PSOs)

LH407B:International Refugee Law (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Analyse the principles and process of refugee status determination.	✓		✓	✓					✓	✓			
CO2:Identify and describe the various concept taught in the respective module.	✓		✓	✓	✓	✓			✓	✓	✓	✓	✓
CO3:Compare, contrast and reflect on theoretical concepts underlying refugee protection and analyse such legal concepts.	✓						✓						✓
CO4:Describe and identify the legal principles and methods to ascertain refugee problems and apply the concept correctly to legal issues on the ground.	✓		✓	✓	✓	✓	✓	✓	✓			✓	✓
CO5:Evaluate the refugee protection as against protection of the other displaced groups and articulate the problem areas for the deficiency.	✓			✓	✓	✓				✓			✓

Table 1354: Mapping between COs of LH407C and (POs& PSOs)

LH407C:Gender Justice and Feminist (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Analyze the philosophical undercurrents of social security, constitutional provisions and developments at the international level.	✓	✓	✓		✓			✓		✓		✓	
CO2:Analyze the various concept relating to industrial dispute.	✓	✓	✓		✓	✓	✓			✓	✓	✓	
CO3:Discuss the intricacies involved in the payment of wages, especially the deductions.	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
CO4:Comprehend the legal provisions with regards to standing orders collective bargaining		✓	✓		✓	✓		✓		✓	✓	✓	✓
CO5:Apply the legal provisions in the contemporary debate on Employees Provident Fund and workers' vulnerability in India.	✓	✓		✓	✓	✓	✓			✓	✓	✓	✓

Table 1355: Mapping between COs of LCI 408 and (POs& PSOs)

LCI 408:Alternate Dispute Resolution (Clinical)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:To analyze various legal frameworks on arbitration, mediation, conciliation and negotiation.	✓	✓	✓	✓	✓	✓			✓	✓		✓	✓
CO2:To understand and analyze the international legal frame work on arbitration and conciliation.	✓	✓	✓	✓	✓	✓			✓	✓		✓	✓
CO3:To apply procedures of ADR mechanisms in simulation exercise	✓	✓		✓						✓		✓	
CO4:Understand arbitral proceedings, foreign award their execution and termination.	✓	✓	✓	✓	✓	✓					✓	✓	✓
CO5:Analyze the other ADR mechanism such as lokadalat, gram nyayalayas, consumer forums and counseling centres.	✓	✓	✓	✓	✓	✓					✓	✓	✓

Table 1356: Mapping between COs of LM 409 and (POs& PSOs)

LM 409:Moot Court													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On the conclusion of the Module, the students would be able to appreciate the research, oratorical and articulation skills required of a lawyer.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Students will be able to comprehend the practicalities of the justice system and the pivotal role the courts play in dispensation of justice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:They will also get a practical exposure to the techniques of client interviewing and the substantive as well as procedural steps involved in preparation of a brief by lawyers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Students will have practical experience of the professional aspects of the subjects they have studies.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:It will help students unearth their potential for the profession and the desirable improvements for the same.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1357: Mapping between COs of LP 410 and (POs& PSOs)

LP 410:Project and Report Presentation													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The student will have ample knowledge on the topic assigned.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:The students will analyze data and try to synthesize the available it.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:The students will demonstrate the understanding of ethical issues involved in the project report.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:The students will demonstrate capacity to improve by engagement and retention.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:The student will be able to demonstrate findings to advance research education theory and practice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1358: Mapping between COs of LC 422 and (POs& PSOs)

LC 422:Civil Procedure Code - II and The Limitation Act													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the various kinds of special suit.	✓		✓	✓		✓	✓			✓	✓		
CO2:Use correct legal terminologies.	✓		✓	✓		✓	✓	✓	✓	✓	✓		✓
CO3:Describe the rules of pleadings and apply them correctly.	✓			✓	✓	✓	✓			✓	✓	✓	✓
CO4:File execution proceedings in the civil courts.	✓	✓	✓	✓		✓	✓	✓		✓	✓		✓
CO5:Apply the provisions of Limitation Act appropriately.	✓	✓		✓	✓		✓			✓	✓	✓	✓

Table 1359: Mapping between COs of LC 423 and (POs& PSOs)

LC 423:Labour Law - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Analyze the philosophical undercurrents of social security, constitutional provisions and developments at the international level.	✓	✓	✓	✓	✓	✓		✓			✓	✓	
CO2:Analyze the various concept relating to industrial dispute.	✓	✓			✓	✓				✓	✓	✓	✓
CO3:Discuss the intricacies involved in the payment of wages, especially the deductions.	✓		✓	✓	✓						✓	✓	
CO4:Comprehend the legal provisions with regards to standing orders collective bargaining, .	✓		✓	✓			✓			✓	✓		✓
CO5:Apply the legal provisions in the contemporary debate on Employees Provident Fund and workers' vulnerability in India.	✓	✓	✓		✓	✓	✓			✓			✓

Table 1360: Mapping between COs of LC 424 and (POs& PSOs)

LC 424:Law of Evidence - II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Elucidate the elementary principle of the Law of Evidence such as burden of proof, presumption as to certain offences.	✓		✓	✓		✓	✓			✓	✓		✓
CO2:Explain the important provisions of the Indian Evidence Act, 1872 relating to estoppel, competency of witness and privileged communications.	✓		✓	✓		✓	✓			✓	✓		✓
CO3:Analyze between opinions, witnesses, and expert testimony and hearsay evidences.	✓		✓	✓		✓	✓			✓	✓		✓
CO4:understand the process of witness examination such as cross examination, re examination and examination of witnesses.	✓		✓	✓		✓	✓			✓	✓		✓
CO5:Apply illegally obtained evidence, burden of proof and privileges, and make an argument for or against the admissibility of evidence including that which has been unlawfully obtained, that which may be more prejudicial than probative, previous sexual history, bad character, hearsay evidence, expert evidence and eyewitness identification evidence.	✓		✓	✓		✓	✓			✓	✓		✓

Table 1361: Mapping between COs of LO 425 and (POs& PSOs)

LO 425:Competition Law (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:To provide an understanding of Competition law, together with the ability to subject it to critical, legal and economic analysis	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:To apply Competition Law principles to the given cases.	✓		✓	✓	✓	✓	✓			✓	✓	✓	
CO3:Rationalise and suggest solutions to the fundamental issues of competition law.	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
CO4:To identify anti-competitive agreements and suggest remedies.	✓	✓	✓	✓	✓	✓				✓		✓	✓
CO5:To explain pricing strategies and abuse of dominant position.	✓		✓		✓	✓	✓			✓	✓	✓	

Table 1362: Mapping between COs of LH 426 and (POs& PSOs)

LH 426:Information Technology Law and Cyber Crime (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Apply the provisions of Information Technology Act to understand digital signatures, electronic signature certificates their objectives and functions.	✓		✓	✓			✓			✓	✓		
CO2:Identify the need for regulation of Information technology and various regulatory models.	✓	✓	✓		✓	✓				✓	✓		✓
CO3:Evaluate as against others the interface between different human rights instruments and challenges faced by information technology.	✓	✓	✓		✓	✓		✓		✓	✓	✓	✓
CO4:Analyse the laws related to cyber defamation through information technology	✓		✓		✓	✓				✓			
CO5:Propose a solution to privacy related issues due to use of computer technology and List out the legal challenges of the information society and the different forms of cyber crimes.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓

Table 1363: Mapping between COs of LH 427 and (POs& PSOs)

LH 427:Penology and Victimology (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The scientific study of criminology and concept of law relating to it and concept of law relating to it. Apart from these general principles in Criminology equally important place of criminal law in criminal science, nature and functions of criminal law.	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓
CO2:The clarity about logical structure of crime prevention and its implementation with judicial pronouncements.	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
CO3:The administration of criminal justice system in India with critical analysis of legislative provisions along with its practical implementation.	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
CO4:The importance of the victim for an investigation and why they are important in the overall scheme of the crime. The reasons for slow development of victim scheme.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO5:The theoretical aspects of punishment give clarity to the students about the nature and purpose of punishment. Its proportionality with the crime and analysis of its deterrent effect on the criminals.	✓	✓			✓	✓				✓	✓	✓	✓

Table 1364: Mapping between COs of LH426A and (POs& PSOs)

LH426A:Bankruptcy and Insolvency (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:They will understand the insolvency and bankruptcy code, its power and functions.	✓		✓		✓	✓	✓				✓		✓
CO2:They will analyse various provision of companies law that deal with insolvency criteria and lays down the procedure to be followed.	✓		✓	✓		✓	✓	✓	✓		✓	✓	✓
CO3:They will have an understanding with regards to qualification,experience of Insolvency Professional.	✓	✓	✓		✓					✓		✓	✓
CO4:They will have understanding of process of Debt recovery through various means unfder the Acts.	✓		✓	✓	✓	✓		✓			✓		
CO5:The will analyse and understand the various acts their provision in relation to insolvency in India.	✓		✓		✓	✓	✓		✓	✓	✓	✓	



Table 1365: Mapping between COs of LH426B and (POs& PSOs)

LH426B:Fiscal Responsibility and Management(Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Introduction to the language and nuances of fiscal rules and responsibilities	✓		✓	✓		✓	✓		✓				✓
CO2:Appreciation of the structure of India's fiscal responsibility and management	✓	✓	✓	✓	✓	✓	✓		✓	✓			✓
CO3:Identification and understanding of the constitutional imperatives relating to fiscal responsibility as a state action	✓	✓			✓	✓	✓					✓	✓
CO4:Elucidation of the statutory framework for fiscal responsibility and budget management in India through the relevant legislation	✓		✓	✓			✓	✓	✓	✓	✓		✓
CO5:Analysis of the Indian scenario of fiscal responsibility and management and suggestions for better implementation of the laws	✓	✓	✓	✓	✓	✓	✓		✓	✓			✓

Table 1366: Mapping between COs of LH426C and (POs& PSOs)

LH426C:Private International Law(Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Distinguish between Public and Private international law.	✓		✓	✓	✓		✓		✓	✓		✓	✓
CO2:Understand and comprehend the legal effects of various treatise and policies.	✓	✓		✓	✓				✓	✓			✓
CO3:Examine the devolution of specialized institution exclusively maneuvered the Private International Law.	✓	✓		✓	✓	✓	✓	✓				✓	
CO4:Being familiar with legal terms, significant theories, and basic legal rules and principles of PIL	✓						✓		✓	✓	✓	✓	✓
CO5:They will Know about the PIL of some major countries abroad	✓		✓	✓	✓		✓					✓	✓

Table 1367: Mapping between COs of LH427A and (POs& PSOs)

LH427A:Law on Infrastructure Development(Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:They will understand Role of various private players and infrastructure project.	✓	✓	✓	✓									✓
CO2:They will analyse the role of government and FDI with regards to Infrastructure Project.	✓	✓			✓	✓	✓		✓	✓		✓	✓
CO3:They will understand various provision of offences, penalties, and procedure of resettlement.	✓		✓	✓	✓	✓		✓		✓	✓		✓
CO4:They will have understanding of Special Economic Zone and impact on infrastructural project.	✓			✓	✓		✓		✓		✓		✓
"CO5:They will have understanding of drafting of the documents. "	✓		✓		✓	✓				✓		✓	

Table 1368: Mapping between COs of LH427B and (POs& PSOs)

LH427B:Local Self Government and Panchayat System(Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Elucidate the elementary principle of the Law of Evidence such as burden of proof, presumption as to certain offences.	✓	✓	✓		✓	✓					✓		✓
CO2:Explain the important provisions of the Indian Evidence Act, 1872 relating to estoppel, competency of witness and privileged communications.	✓	✓	✓		✓	✓			✓	✓		✓	✓
CO3:Analyze between opinions, witnesses, and expert testimony and hearsay evidences.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
CO4:understand the process of witness examination such as cross examination, re examination and examination of witnesses.	✓			✓			✓	✓	✓	✓			✓
CO5:Apply illegally obtained evidence, burden of proof and privileges, and make an argument for or against the admissibility of evidence including that which has been unlawfully obtained, that which may be more prejudicial than probative, previous sexual history, bad character, hearsay evidence, expert evidence and eyewitness identification evidence.	✓			✓			✓	✓	✓	✓			✓

Table 1369: Mapping between COs of LH427C and (POs& PSOs)

LH427C:UNICITRAL Model Code(Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:They will understand and analyse International Commercial Arbitration.	✓	✓				✓					✓		
CO2:They will analyse the diversified work areas of UNCI-TRAL Model.	✓				✓	✓	✓	✓	✓	✓		✓	✓
CO3:They will understand about arbitral tribunal and its working.	✓		✓	✓		✓	✓			✓	✓	✓	✓
CO4:They will understand legislative provision of UNCI-TRAL Model and its working.	✓	✓	✓	✓	✓							✓	✓
CO5:They will analyse and understand about arbitral award, settlement proceeding and termination of proceeding.	✓					✓	✓				✓	✓	✓

Table 1370: Mapping between COs of LCL 428 and (POs& PSOs)

LCL 428:Drafting,Pleading and Conveyance (Clinical)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Draft the legal deeds/documents/pleadings flawlessly.	✓		✓	✓	✓	✓	✓		✓	✓	✓		
CO2:Appreciate the abstract concepts and put forth an effective argument in drafting of civil pleading.	✓		✓	✓			✓	✓	✓	✓	✓		
CO3:Identify the issues involved, collect appropriate evidence, get true and correct information.	✓		✓	✓		✓	✓		✓	✓	✓		
CO4:Draft the legal deeds and documents with precision by following the appropriate legal format.	✓		✓	✓		✓	✓	✓	✓	✓	✓		
CO5:Scrutinize the legal documents and deeds.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	

Table 1371: Mapping between COs of LM 429 and (POs& PSOs)

LM 429:Moot Court													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On the conclusion of the Module, the students would be able to appreciate the research, oratorical and articulation skills required of a lawyer.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Students will be able to comprehend the practicalities of the justice system and the pivotal role the courts play in dispensation of justice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:They will also get a practical exposure to the techniques of client interviewing and the substantive as well as procedural steps involved in preparation of a brief by lawyers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Students will have practical experience of the professional aspects of the subjects they have studies.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:It will help students unearth their potential for the profession and the desirable improvements for the same.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1372: Mapping between COs of LP 430 and (POs& PSOs)

LP 430:Project and Report Presentation													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The student will have ample knowledge on the topic assigned.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:The students will analyze data and try to synthesize the available it.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:The students will demonstrate the understanding of ethical issues involved in the project report.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:The students will demonstrate capacity to improve by engagement and retention.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:The student will be able to demonstrate findings to advance research education theory and practice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1373: Mapping between COs of LC 502 and (POs& PSOs)

LC 502:Administrative Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Discuss the basic doctrines of administrative law, to describe delegated legislation and quasi legislation, to discuss the concept and components of natural justice.	✓	✓	✓		✓	✓	✓		✓	✓	✓		✓
CO2:Explain the difference between discretionary functions and ministerial functions.	✓	✓	✓	✓	✓	✓		✓		✓	✓		✓
CO3:Enumerate grounds on which judiciary may review administrative actions and explain the related doctrines.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
CO4:Discuss the importance, merits and demerits of quasi-judicial bodies.	✓	✓	✓	✓	✓		✓			✓	✓		✓
CO5:Explain the grounds to obtain remedies against government.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓

Table 1374: Mapping between COs of LC 503 and (POs& PSOs)

LC 503:Company Law - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Appreciate the importance of business associations, history and regulatory framework relating to the same.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
CO2:Explain jurisprudential aspects of 'company' and classification of companies.	✓	✓			✓	✓				✓	✓	✓	
CO3:Elucidate the process of formation of different kinds of companies and commencement of business.	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
CO4:Describe the method of giving security for repayment of loan or other liabilities of a company.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
CO5:Evaluate ultra vires actions, consequences and remedies available to the companies and their agents	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓

Table 1375: Mapping between COs of LC 504 and (POs& PSOs)

LC 504:Labour Law - II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Explain the Employee compensation act, its nature and objective along with the procedure to settle disputes.	✓	✓	✓	✓	✓	✓				✓	✓		✓
CO2:Identify and appreciate the need for a law relating to Payment of wages act and maternity benefit act in India the authorities under the act and the interpretation of important concepts.	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
CO3:Explain the paramount of Employee provident schemes, employee pension scheme.	✓	✓	✓			✓				✓	✓	✓	✓
CO4:Analyse the employee state insurance act and the authorities for adjudication of disputes and claims.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
CO5:Evaluate the significance of application of various provisions of payment of wages and deductions the authorities to hear claim and appeal.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓

Table 1376: Mapping between COs of LO 505 and (POs& PSOs)

LO 505:Law Relating to Patent (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the different forms of intellectual property and describe the importance of protection of Intellectual Property Right.	✓		✓		✓	✓				✓	✓		✓
CO2:List out the criteria/essential requirements of Patent protection, duration, rights conferred and remedies provided.	✓		✓		✓	✓				✓	✓		✓
CO3:Apply the principles of Patent protection to legal problems correctly.	✓	✓	✓	✓	✓	✓	✓			✓	✓		✓
CO4:Analyse the issues related to infringement of patent.	✓	✓	✓	✓	✓	✓	✓			✓	✓		✓
CO5:Evaluate as to the procedure to obtain patent in India.	✓	✓	✓	✓	✓	✓	✓			✓	✓		✓

Table 1377: Mapping between COs of LH 506 and (POs& PSOs)

LH 506:Law Relating to Women and Children (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the major social reforms during the 19 th century in India for the uplifting women.	✓	✓	✓	✓	✓				✓			✓	✓
CO2:List out the loopholes in law enforcement agencies in securing access to justice to women.	✓	✓	✓	✓	✓	✓			✓			✓	✓
CO3:Apply the different legislations enacted for women development and empowerment.	✓		✓		✓	✓	✓		✓	✓	✓		✓
CO4:Analyse the issues related to violence against women under the Protection of Women from Domestic Violence Act, 2005.	✓		✓		✓	✓	✓		✓	✓	✓		✓
CO5:Evaluate as against other the impact of specificlaws enacted to secure justice to women against dowry related harassments, dowry deaths, molestation, sexual abuse and rape.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1378: Mapping between COs of LH506A and (POs& PSOs)

LH506A:Civil Society and Grievances (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:To provide an understanding of Competition law, together with the ability to subject it to critical, legal and economic analysis	✓	✓	✓		✓	✓						✓	✓
CO2:To apply Competition Law principles to the given cases.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:Rationalise and suggest solutions to the fundamental issues of competition law.	✓	✓		✓			✓	✓	✓	✓	✓	✓	
CO4:To identify anti-competitive agreements and suggest remedies.	✓		✓		✓	✓						✓	✓
CO5:To explain pricing strategies and abuse of dominant position.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1379: Mapping between COs of LH506B and (POs& PSOs)

LH506B:IMF and World Bank (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:They can understand the working of world bank	✓		✓	✓	✓								
CO2:They can understand the working and functioning of IDA, ICSID, MIGA	✓		✓	✓	✓	✓	✓		✓		✓		✓
CO3:They will gain knowledge with regards to composition and power of IMF.	✓		✓	✓						✓		✓	✓
CO4:They will learn about the process of Governance by IMF.	✓		✓	✓		✓	✓		✓	✓			✓
CO5:They will learn about the new reforms of world bank and IMF.	✓		✓	✓								✓	

Table 1380: Mapping between COs of LH506C and (POs& PSOs)

LH506C:Indirect Taxes (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:At the end of the semester Student will have full fledged knowledge about the subject.	✓	✓	✓			✓	✓	✓	✓		✓		✓
CO2:This will help the student in knowing the various taxes and their usages.	✓			✓	✓	✓					✓	✓	
CO3:It will enhance the knowledge with regards to central excise, customs and sales act.	✓	✓	✓	✓			✓	✓		✓			
CO4:Understand the various fundamentals of tax system in India	✓	✓	✓		✓	✓						✓	✓
CO5:Understand the utility of service tax in India	✓	✓	✓	✓			✓		✓	✓			✓

Table 1381: Mapping between COs of LCL 507 and (POs& PSOs)

LCL 507:Professional Ethics and Professional Accounting System (Clinical)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the historical evolution of the legal profession as well as the various codes of conduct and ethical norms for the advocates.	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
CO2:To understand the contempt law in India and the classifications of contempt, the punishments and remedies etc.	✓		✓	✓	✓		✓	✓		✓	✓		
CO3:Understand practically the situations Involves case studies by the students and case presentations in the class.	✓		✓	✓	✓		✓	✓		✓	✓		✓
CO4:To acquaint students with general principles of accounting.	✓		✓	✓	✓		✓	✓		✓	✓		✓
CO5:To understand bar bench relationship, punishment for misconduct.	✓		✓	✓	✓		✓	✓		✓	✓		✓

Table 1382: Mapping between COs of LM 508 and (POs& PSOs)

LM 508:Moot Court													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On the conclusion of the Module, the students would be able to appreciate the research, oratorical and articulation skills required of a lawyer.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Students will be able to comprehend the practicalities of the justice system and the pivotal role the courts play in dispensation of justice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:They will also get a practical exposure to the techniques of client interviewing and the substantive as well as procedural steps involved in preparation of a brief by lawyers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Students will have practical experience of the professional aspects of the subjects they have studies.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:It will help students unearth their potential for the profession and the desirable improvements for the same.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1383: Mapping between COs of LP 509 and (POs& PSOs)

LP 509:Project and Report Presentation													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The student will have ample knowledge on the topic assigned.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:The students will analyze data and try to synthesize the available it.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:The students will demonstrate the understanding of ethical issues involved in the project report.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:The students will demonstrate capacity to improve by engagement and retention.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:The student will be able to demonstrate findings to advance research education theory and practice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓



Table 1384: Mapping between COs of LC 522 and (POs& PSOs)

LC 522:Company Law - II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the powers of a Board vis-a-vis a General Meeting in view of statutory provisions and precedents.	✓	✓	✓		✓	✓				✓	✓		✓
CO2:Gives a bird's eye view of the composition and power equation of a Board and Inspection and Investigation of Board.	✓	✓	✓		✓	✓				✓	✓		✓
CO3:Give a comprehensive account of Meetings along with knowledge of Merger, Acquisition, Amalgamation.	✓	✓	✓		✓	✓				✓	✓		✓
CO4:Get a clear idea on emphasize on the liquidation of a company and winding up.	✓	✓	✓		✓	✓				✓	✓		✓
CO5:Understand the basic underlying principles of corporate law.	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓

Table 1385: Mapping between COs of LC 523 and (POs& PSOs)

LC 523:Principles of Taxation													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Describe the basic concepts relating to Income Tax Act, 1961 and GST Act, 2017	✓	✓	✓		✓	✓					✓		✓
CO2:Explain different types of incomes, their taxability, expenses and deductibility	✓		✓	✓		✓	✓	✓		✓	✓		✓
CO3:Interpret the provisions and cases relating to tax laws	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Learn various direct and indirect taxes	✓	✓		✓		✓	✓	✓	✓	✓	✓		✓
CO5: implication in practical situations in direct and indirect taxes	✓		✓		✓	✓				✓	✓		✓

Table 1386: Mapping between COs of LC 524 and (POs& PSOs)

LC 524:Public International Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Critically analyse various theories of International Law and sources of International Law.	✓		✓		✓	✓				✓	✓		✓
CO2:Critically analyse and interpret various Theories of Recognition Law of Treaties.	✓		✓		✓	✓				✓	✓		✓
CO3:Find out various complex issues in the International sphere and apply International Law principles to study such problems.	✓	✓	✓		✓	✓				✓	✓		✓
CO4:Analyse various diplomatic relations and the principles of extradition.	✓	✓	✓		✓	✓				✓	✓		✓
CO5:Critically analyse the role of Various specialized agencies and the role of ICJ in settling the disputes between nations amicably	✓	✓	✓		✓	✓				✓	✓		✓

Table 1387: Mapping between COs of LO 525 and (POs& PSOs)

LO 525:Law relating to Copyright and Trade Mark (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the different forms of intellectual property and describe their importance	✓	✓	✓		✓	✓			✓		✓	✓	✓
CO2:List out the criteria/essential requirements of Assignment, Transmission, Licensing and Infringement.	✓			✓			✓	✓	✓	✓	✓		✓
CO3: Apply the principles of Trademark, collective mark and process of registration	✓			✓			✓	✓	✓	✓	✓		✓
CO4:Analyse the issues related to infringement of Copyright and Trademark.	✓	✓	✓	✓	✓	✓				✓		✓	✓
CO5:Propose a solution and remedies to the infringement problems in India.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓

Table 1388: Mapping between COs of LH 526 and (POs& PSOs)

LH 526:Investment Law (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Relate the history and evolution of investment law and to comment and evaluate the impact of investment commitments on domestic legal systems	✓	✓	✓		✓	✓		✓		✓	✓		✓
CO2:Investigate and analyse problems, concepts and theories in relation to investment law and understanding the capital market.	✓		✓	✓			✓	✓	✓	✓	✓		
CO3:Analyse and explain the application of principles of investment law in the field of securities.	✓		✓	✓			✓	✓	✓	✓	✓		
CO4:Assess the soundness of the decision taken by SEBI and its regulatory mechanism.	✓			✓		✓	✓	✓	✓	✓			✓
CO5:Interpret the provisions of investment law with regards to Unit Trust of India and venture capital.	✓			✓		✓	✓	✓	✓	✓			✓

Table 1389: Mapping between COs of LH526A and (POs& PSOs)

LH526A:International Criminal Justice													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:They will understand concept and various sources of International Criminal Law.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓
CO2:They will understand the nature and forms of International crimes, rights of accused and protection of victims.	✓	✓	✓		✓		✓		✓	✓		✓	✓
CO3:They will understand extradition act and prosecution procedure in international crime.	✓		✓	✓	✓				✓	✓	✓	✓	✓
CO4:They will understand and crime in Transnational Jurisdiction.	✓	✓				✓	✓		✓	✓	✓		✓
CO5:They will analyse and understand role of United Nation in preventing international crime.	✓	✓		✓	✓				✓	✓			✓

Table 1390: Mapping between COs of LH526B and (POs& PSOs)

LH526B: Internatioanl Criminal Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1: They will understand the criminal law proceedings in international perspective.	✓	✓	✓	✓	✓	✓	✓				✓	✓	
CO2: They will analyse various principles, treaties and convention of International Criminal Law	✓				✓			✓	✓	✓	✓		
CO3: They will understand the working of some special tribunal and Extraordinary courts.	✓		✓	✓		✓				✓			
CO4: They will understand ICL from Indian context and will be able to compare that with other countries	✓		✓		✓	✓	✓			✓	✓	✓	✓
CO5: They will understand ICL from Indian context and will be able to compare that with other countries	✓		✓		✓			✓					✓

Table 1391: Mapping between COs of LH526C and (POs& PSOs)

LH526C: Media and Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1: Understand the concept of freedom of speech and expression in its domestic and international legal framework	✓		✓	✓	✓	✓						✓	✓
CO2: Elucidate the theories related to media, and rights and immunities available to the press and media	✓	✓		✓			✓	✓	✓	✓	✓		✓
CO3: Identify the restrictions on the freedom of press and media	✓	✓	✓	✓			✓		✓	✓	✓		✓
CO4: Identify and understand the statutory and regulatory framework for the rights and liabilities of the media	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
CO5: Understand the nuances of functionality of the media in particular political structures like a democracy	✓	✓	✓		✓	✓						✓	✓

Table 1392: Mapping between COs of LCL 527 and (POs& PSOs)

LCL 527:Moot Court Exercise and Internship (Clinical)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On the conclusion of the Module, the students would be able to appreciate the research, oratorical and articulation skills required of a lawyer.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Students will be able to comprehend the practicalities of the justice system and the pivotal role the courts play in dispensation of justice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:They will also get a practical exposure to the techniques of client interviewing and the substantive as well as procedural steps involved in preparation of a brief by lawyers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Students will have practical experience of the professional aspects of the subjects they have studies.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:It will help students unearth their potential for the profession and the desirable improvements for the same.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1393: Mapping between COs of LP 528 and (POs& PSOs)

LP 528:Seminar and Comprehensive Viva - Voice													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand and analyze the basic legal problems and do team work to solve them cooperatively with others on joint assignments.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Provide legal assistance either as paralegal volunteers or student volunteers to the common people about basic legal concepts which are essential in their day to day life.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:Learn to work with cultural diversity outside the class with a variety of ethnic, social, or educational backgrounds in the context of service motive.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:The students will demonstrate capacity to improve by engagement and retention.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:The student will be able to demonstrate findings to advance research education theory and practice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

### 11.3.3 LL.B(H)

Table 1394: Mapping between COs of 3LC 111 and (POs& PSOs)

3LC 111:Jurisprudence													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify and describe the concept, scope, and utility of jurisprudence.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO2:List out the essential characteristic and concept of natural law theory, historical school, philosophical school.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO3:Apply the Marxian concept of law correctly to legal problems	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO4:Analyse the Scandinavian realism and sociological concept.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO5:Evaluate as against other events of a similar nature and articulate the problem areas for the deficiency. Devise a correct way of handling the legal problem	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓

Table 1395: Mapping between COs of 3LC112 and (POs& PSOs)

3LC112:Law of Contract-I (General Principles of Contract)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Explain the concepts in Contractual laws.	✓		✓		✓	✓					✓		
CO2:Identify the general principles of Indian Contract Act, 1872.	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO3:Apply the global business laws to current business environment.	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
CO4:Analyse the principles of business and strategies adopted by firms.	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	
CO5:Integrate concept of business law with foreign trade.	✓	✓				✓	✓		✓	✓			✓

Table 1396: Mapping between COs of 3LC113 and (POs& PSOs)

3LC113:Constitutional Law - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The student will get clear picture about the concept of rule of law and constitutionalism in a historical point of view.	✓		✓		✓	✓				✓		✓	✓
CO2:Students will understand Salient features of Indian constitution	✓		✓		✓	✓				✓		✓	✓
CO3:Students will have clarity about the concept of equality, its origin, development and its place in Indian Constitution.	✓		✓		✓	✓				✓		✓	✓
CO4:The students will have in depth understanding about fundament rights enshrined in the constitution and ground for their restrictions.	✓		✓		✓	✓				✓		✓	✓
CO5:The student will be able to narrate the importance of Directive Principles of State policy.	✓		✓		✓	✓				✓		✓	✓

Table 1397: Mapping between COs of 3LC114 and (POs& PSOs)

3LC114:Indian Penal Code – I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The students will understand the conceptual foundations of crime laced with the basic underlying philosophy of the Indian Penal Code.	✓	✓	✓	✓	✓	✓	✓			✓			✓
CO2:The students will learn the nature and significance of punishment for the effective implementation of criminal law.	✓			✓		✓	✓		✓	✓	✓		✓
CO3:Student will understand the very important, although not often emphasized, aspect of a crime viz. abetment.	✓					✓				✓		✓	✓
CO4:Dissemination of a concept that has gained importance of late, i.e., criminal conspiracy and offences against the State.	✓					✓				✓		✓	✓
CO5:The student will understand emphasizes on the various offences affecting public tranquility which is of vital importance for peace and order in the society.	✓	✓	✓	✓	✓	✓				✓		✓	✓

Table 1398: Mapping between COs of 3LC115 and (POs& PSOs)

3LC115:Transfer of Property- I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On completion of the course students will be able to analyze the various terms that appears in the enactment so as to understand the objective of this Act better as well as for better understanding.	✓			✓		✓	✓	✓		✓		✓	✓
CO2:The students will understand certain basic principles underlying any kind of transfers. The module also deals with certain cardinal principles which has to be followed regarding transfer.	✓		✓				✓		✓	✓	✓		
CO3:Election is an important concept of Transfer where the non owner of the property gives an option to the owner of the property to exchange his property for a benefit which is a peculiar rule as only the owners have the right sell their property. The next module throws light on transfer for certain purposes and by certain owners.	✓		✓				✓		✓	✓	✓		
CO4:The student will deal with specific type of transfer that is through Sale and exchange. The students will know the rights and duties of the seller and the buyer before and after sale.	✓		✓				✓		✓	✓	✓		
CO5:On completion of the course students will be able to describe the different types of mortgage and their essentials, remedies available to the parties.	✓		✓	✓			✓	✓	✓	✓	✓	✓	✓

Table 1399: Mapping between COs of 3LC116 and (POs& PSOs)

3LC116:Family Law- I (Hindu Law)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:connect the core concept relating to traditional law with the reformed modern Hindu law which is based on statutes.		✓			✓	✓						✓	✓
CO2:Appraise on the nature of property transaction that exist in Hindu family relations and the importance of ancestral property and karta in hindu family.	✓	✓			✓	✓				✓		✓	✓
CO3:Analyse and critically understand the concept of marriage and relate it to the changing nature of marriage as is witnessed today such as live-in relationships and recognition of same sex marriages.	✓	✓			✓	✓				✓		✓	✓
CO4:Better understanding the core concepts of Hindu adoption laws. The complete subject will help students analyze it from sociological perspective thereby understanding the importance adoption law has in the development of child.	✓	✓	✓			✓						✓	✓
CO5:Appraise the law relating to guardianship and the importance of guardian in matter relating to wards.	✓	✓	✓			✓						✓	✓

Table 1400: Mapping between COs of 3LC117 and (POs& PSOs)

3LC117:Law of Torts -I and The Consumer Protection Act													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Analyze the foundational principles of tort law.	✓		✓		✓	✓					✓		
CO2:Apply tort law to complex problems using appropriate legal problem solving technique.	✓		✓		✓		✓		✓	✓	✓	✓	
CO3:Have a basic idea and understanding of Justification and liabilities in torts.		✓	✓		✓		✓	✓		✓		✓	
CO4:Have a clear understanding of Consumer Protection Act.		✓	✓	✓	✓	✓	✓	✓		✓		✓	
CO5:Have clear understanding as to vicarious liability strict and absolute liability and consumer protection act.	✓	✓				✓	✓		✓	✓			✓

Table 1401: Mapping between COs of 3LC121 and (POs& PSOs)

3LC121:Law of Contract – II (Specific Contract)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Define distinguish and apply the basic concepts and terminologies of Law of Contract.	✓		✓		✓	✓					✓		
CO2:Define and Distinguish amongst the various processes involved in contract formation.	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
CO3:Identify the relevant legal issues that arise on a given set of facts in the area of contract law.	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
CO4:Understand the Contract of bailment, pledge and agency and the extent of these authorities and various doctrines related to these concepts.	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	
CO5:Understand the sales of goods act and partnership act their related doctrines and their outcomes.	✓	✓				✓	✓		✓	✓			✓

Table 1402: Mapping between COs of 3LC122 and (POs& PSOs)

3LC122:Constitutional Law - II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the composition of parliament and will clear cut idea of different legislative bodies.	✓	✓	✓		✓	✓		✓		✓			✓
CO2:Give an insight to the different forms of Governments their features, merits and de-merits.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO3:Further, it enables the students to understand the judicial perspective over the Indian federalism.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO4:understand the composition features of election commission of india, emergency provision.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO5:understand the centre state relationship, provision of interstate trade and commerce.	✓	✓	✓		✓	✓		✓		✓		✓	✓



Table 1403: Mapping between COs of 3LC123 and (POs& PSOs)

3LC123:Indian Penal Code – II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Learn about the various offences affecting human body including life.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Understand the concept of hurt, grievous hurt, wrongful restraint, Kidnapping.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:Analyze and understand the provisions of offences against property including theft, extortion,robbery, dacoity, mischief and criminal trespass.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Understanding the principles of biagamy, cruelty, unlawful marriages.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:Analyse and understand the concept of defamation, offences relating to marriage, criminal intimidation.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1404: Mapping between COs of 3LC124 and (POs& PSOs)

3LC124:Criminal Procedure Code - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Learn the basic aspects of criminal procedure the nature, function and the other provisions relating to arrest of persons.	✓			✓			✓	✓		✓			
CO2:Acquaint with the ways by which law prevents starvation and vagrancy etc leading to commission of crimes.	✓	✓	✓	✓	✓	✓				✓		✓	✓
CO3:Understand how the Code has also made provisions for the prevention of crimes and how the complaint procedure is laid down.		✓	✓		✓	✓						✓	✓
CO4:Impart knowledge about various aspects of investigation, the procedure of charges and provisions relating to bail.	✓						✓	✓	✓	✓	✓	✓	✓
CO5:Understaning of various types of arrest, search and seizure under the Cr.PC.	✓						✓	✓	✓	✓	✓	✓	✓

Table 1405: Mapping between COs of 3LC125 and (POs& PSOs)

3LC125:Transfer of Property - II and Specific Relief													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand principles relating to mortgage, rights and liabilities of mortgager and mortgagee.	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
CO2:Understand the principles of Marshalling and contributions, redemption.	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
CO3:Understand the principles governing transfer of actionable claim, exchanges, gift.	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
CO4:Understand the intricacies of Specific relief act and contracts related to recovery of possession of movable property and immovable property.	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓
CO5:Analyze the process of injunction, rectification of instrument, cancellation of instrument.	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓

Table 1406: Mapping between COs of 3LC126 and (POs& PSOs)

3LC126:Family Law – II (Mohammedan Law)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the origin and development, schools, and sources of mohammedan law.		✓			✓	✓						✓	✓
CO2:Understand the aspect of marriage, its type the legal effects and can get knowledge on concepts related to dower.	✓	✓			✓	✓				✓		✓	✓
CO3:Have broader understanding of Maintenance, wakf, pre-emption and guardianship.	✓	✓			✓	✓				✓		✓	✓
CO4:Understand provisions related to muslim gift, will and succession.	✓	✓	✓			✓						✓	✓
CO5:Understand the basic underlying principles under Muslim Personal Laws.	✓	✓	✓			✓						✓	✓

Table 1407: Mapping between COs of 3LC127 and (POs& PSOs)

3LC127:Law of Torts-II and The Motor Vehicle Act													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Describe The provisions of the Motor Vehicles Acts relating to registration of motor vehicles.	✓		✓		✓	✓					✓		
CO2:Necessity of registration, Procedure for registration, No-objection certificate, Age limit for motor vehicles, Control of transport vehicles, Provisions relating to state transport undertakings, Construction, equipment and maintenance of motor vehicles, Control of traffic, Motor vehicles temporarily leaving or visiting India.	✓		✓		✓		✓		✓	✓	✓	✓	
CO3:Liability to pay compensation, permanent disablement, insurance of motor vehicles, against third party risks, Motor Vehicles Claims Tribunal, offences and penalties under the Act		✓	✓		✓		✓	✓		✓		✓	
CO4:To acquaint students with the different torts against persons and personal relationships and the circumstances in which a person is liable for committing such torts		✓	✓	✓	✓	✓	✓	✓		✓		✓	
CO5:Acquaint students with the different torts against properties and the circumstances in which a person is liable for committing such torts.	✓	✓				✓	✓		✓	✓			✓

Table 1408: Mapping between COs of 3LC211 and (POs& PSOs)

3LC211:Law of Evidence - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Elucidate the elementary principle of the Law of Evidence.	✓		✓	✓	✓	✓			✓	✓	✓		✓
CO2:Explain the important provisions of the Indian Evidence Act, 1872.	✓		✓	✓	✓	✓			✓	✓	✓		✓
CO3:Analyze between opinions, witnesses, and expert testimony and hearsay evidences.	✓		✓	✓	✓	✓			✓	✓	✓		✓
CO4:Make an argument for or against the admissibility of evidence including that which has been unlawfully obtained, that which may be more prejudicial than probative, previous sexual history, bad character, hearsay evidence, expert evidence and eyewitness identification evidence.	✓		✓	✓	✓	✓			✓	✓	✓		✓
CO5:Understand the Public and private document and statements of admission and confession.	✓		✓	✓	✓	✓			✓	✓	✓		✓

Table 1409: Mapping between COs of 3LC212 and (POs& PSOs)

3LC212:Labour Law - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Analyze the philosophical undercurrents of social security, constitutional provisions and developments at the international level.	✓	✓	✓	✓	✓	✓		✓			✓	✓	
CO2:Analyze the various concept relating to industrial dispute.	✓	✓			✓	✓				✓	✓	✓	✓
CO3:Discuss the intricacies involved in the payment of wages, especially the deductions.	✓		✓	✓	✓						✓	✓	
CO4:Comprehend the legal provisions with regards to standing orders collective bargaining.	✓		✓	✓			✓			✓	✓		✓
CO5:Apply the legal provisions in the contemporary debate on Employees Provident Fund and workers' vulnerability in India.	✓	✓	✓		✓	✓	✓			✓			✓

Table 1410: Mapping between COs of 3LC213 and (POs& PSOs)

3LC213:Administrative Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Discuss the basic doctrines of administrative law, to describe delegated legislation and quasi legislation, to discuss the concept and components of natural justice.	✓	✓	✓		✓	✓	✓		✓	✓	✓		✓
CO2:Explain the difference between discretionary functions and ministerial functions.	✓	✓	✓	✓	✓	✓		✓		✓	✓		✓
CO3:Enumerate grounds on which judiciary may review administrative actions and explain the related doctrines.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
CO4:Discuss the importance, merits and demerits of quasi-judicial bodies.	✓	✓	✓	✓	✓		✓			✓	✓		✓
CO5:Explain the grounds to obtain remedies against government.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓

**Table 1411: Mapping between COs of 3LC214 and (POs& PSOs)**

3LC214:Criminal Procedure Code -II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Acquaint with understanding of various forms of charges under the Cr.PC.	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO2:Acquaint the students to the provisions of charges and other provisions relating to bail procedure.	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO3:Deals with pronouncement of judgment and preferring appeal.	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO4:deals with process of reference, revision and transfer protect the life and liberty of the accused.	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
CO5:Teach students the process of execution of a sentence, suspension, remission and commutation of sentence etc once the trial court hands out a judgment.	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓

**Table 1412: Mapping between COs of 3LC215 and (POs& PSOs)**

3LC215:Environmental Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the Concepts related to Environmental law such as Polluters pay principle, no fault liability etc.	✓		✓		✓	✓					✓		
CO2:Understand various environmental problems and subsequent conventions undertaken to trackle them.	✓		✓		✓		✓		✓	✓	✓	✓	
CO3:Understand International Framework on climate change.		✓	✓		✓		✓	✓		✓		✓	
CO4:Understand the various doctrines and the legal remedies available under IPC, Tort, CrPc etc.		✓	✓	✓	✓	✓	✓	✓		✓		✓	
CO5:Understand the basic underlying principles under the various conventions related to environmental laws.	✓	✓				✓	✓		✓	✓			✓

**Table 1413: Mapping between COs of 3LH216 and (POs& PSOs)**

3LH216:Law of Insurance (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the basic concept of insurance law, their essentials, and their principles.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO2:Analyze the legal characteristic of contract of insurance such as unilateral, personal and adhesion contract.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO3:Understand the formation establishment and working of IRDA.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO4:Analyze the concept of life insurance its objective, establishment and functions.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
CO5:Understand the fire and marine insurance its nature, concept and principles.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓

Table 1414: Mapping between COs of 3LH217 and (POs& PSOs)

3LH217:Penology and Victimology (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The scientific study of criminology and concept of law relating to it and concept of law relating to it. Apart from these general principles in Criminology equally important place of criminal law in criminal science, nature and functions of criminal law.	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓
CO2:The clarity about logical structure of crime prevention and its implementation with judicial pronouncements.	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
CO3:The administration of criminal justice system in India with critical analysis of legislative provisions along with its practical implementation.	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
CO4:The importance of the victim for an investigation and why they are important in the overall scheme of the crime. The reasons for slow development of victim scheme.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CO5:The theoretical aspects of punishment give clarity to the students about the nature and purpose of punishment. Its proportionality with the crime and analysis of its deterrent effect on the criminals.	✓	✓			✓	✓				✓	✓	✓	✓

Table 1415: Mapping between COs of 3LH216A and (POs& PSOs)

3LH216A:Legal Philosophy including thoery of Justice (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Elucidate the nature, scope and development of legal philosophy	✓		✓		✓	✓	✓		✓	✓	✓	✓	✓
CO2:Understand the ideas and theories relating to law, society and people as propounded by the different schools of jurisprudence	✓				✓	✓						✓	✓
CO3:Understand the different legal concepts that form the basis of objective law making in modern legal systems	✓		✓	✓	✓	✓	✓		✓	✓	✓		✓
CO4:Analyze the concept of justice from theories of different jurists and philosophers	✓	✓	✓	✓			✓			✓		✓	✓
CO5:Explain justice as a means and an end for larger constitutional goals, through judicial process and activism.	✓	✓	✓	✓			✓		✓	✓		✓	✓

Table 1416: Mapping between COs of 3LH217B and (POs& PSOs)

3LH217B:International Environmental Laws(Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify and describe relevant important sources and concepts pertaining to the international law system governing the environment.	✓		✓		✓	✓			✓				✓
CO2:Identify and analyse various regulations relating to transboundary environmental themes and the global commons.	✓		✓	✓					✓		✓		✓
CO3:Discuss the essence of State liability and State sovereignty in transboundary environmental issues.	✓	✓		✓	✓		✓		✓				✓
CO4:Describe the differences between international environmental governance and domestic regulation, and the interconnectivity between the two.	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓
CO5:This course examines the role of international law in addressing global environmental problems.	✓			✓	✓	✓	✓	✓	✓			✓	✓

Table 1417: Mapping between COs of 3LCL218 and (POs& PSOs)

3LCL218:Professional Ethics and Professional Accounting System (Clinical)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the historical evolution of the legal profession as well as the various codes of conduct and ethical norms for the advocates.	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
CO2:To understand the contempt law in India and the classifications of contempt, the punishments and remedies etc.	✓		✓	✓	✓		✓	✓		✓	✓		
CO3:Understand practically the situations Involves case studies by the students and case presentations in the class.	✓		✓	✓	✓		✓	✓		✓	✓		✓
CO4:To acquaint students with general principles of accounting.	✓		✓	✓	✓		✓	✓		✓	✓		✓
CO5:To understand bar bench relationship, punishment for misconduct.	✓		✓	✓	✓		✓	✓		✓	✓		✓

Table 1418: Mapping between COs of 3LC221 and (POs& PSOs)

3LC221:Law of Evidence - II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Elucidate the elementary principle of the Law of Evidence such as burden of proof, presumption as to certain offences.	✓		✓	✓		✓	✓			✓	✓		✓
CO2:Explain the important provisions of the Indian Evidence Act, 1872 relating to estoppel, competency of witness and privileged communications.	✓		✓	✓		✓	✓			✓	✓		✓
CO3:Analyze between opinions, witnesses, and expert testimony and hearsay evidences.	✓		✓	✓		✓	✓			✓	✓		✓
CO4:understand the process of witness examination such as cross examination, re examination and examination of witnesses.	✓		✓	✓		✓	✓			✓	✓		✓
CO5:Apply illegally obtained evidence, burden of proof and privileges, and make an argument for or against the admissibility of evidence including that which has been unlawfully obtained, that which may be more prejudicial than probative, previous sexual history, bad character, hearsay evidence, expert evidence and eyewitness identification evidence.	✓		✓	✓		✓	✓			✓	✓		✓

Table 1419: Mapping between COs of 3LC222 and (POs& PSOs)

3LC222:Labour Law - II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Explain the Employee compensation act ,its nature and objective along with the procedure to settle disputes.	✓	✓	✓	✓	✓	✓				✓	✓		✓
CO2:Identify and appreciate the need for a law relating to Payment of wages act and maternity benefit act in India the authorities under the act and the interpretation of important concepts.	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
CO3:Explain the paramount of Employee provident schemes, employee pension scheme.	✓	✓	✓			✓				✓	✓	✓	✓
CO4:Analyse the employee state insurance act and the authorities for adjudication of disputes and claims.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
CO5:Evaluate the significance of application of various provisions of payment of wages and deductions the authorities to hear claim and appeal.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓



Table 1420: Mapping between COs of 3LC223 and (POs& PSOs)

3LC223:Public International Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Critically analyse various theories of International Law and sources of International Law.	✓		✓		✓	✓				✓	✓		✓
CO2:Critically analyse and interpret various Theories of Recognition Law of Treaties.	✓		✓		✓	✓				✓	✓		✓
CO3:Find out various complex issues in the International sphere and apply International Law principles to study such problems.	✓	✓	✓		✓	✓				✓	✓		✓
CO4:Analyse various diplomatic relations and the principles of extradition.	✓	✓	✓		✓	✓				✓	✓		✓
CO5:Critically analyse the role of Various specialized agencies and the role of ICJ in settling the disputes between nations amicably	✓	✓	✓		✓	✓				✓	✓		✓

Table 1421: Mapping between COs of 3LO224 and (POs& PSOs)

3LO224:Human Rights (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On completion of the module students will be able to connect the core concepts involved evolution and development of human rights worldwide, the nature of Human Rights and Group Rights.	✓	✓	✓		✓	✓						✓	✓
CO2:Students will be able to understand the constitutional aspects along with the statutory framework of National and State Human Rights Commissions.	✓				✓			✓	✓	✓	✓		✓
CO3:Students will be able to understand the societal expectations in terms of human rights		✓		✓	✓	✓		✓		✓		✓	
CO4:Students will be able to comprehend the nuances of criminal infractions and the resultant rights abuse.		✓		✓	✓	✓		✓		✓		✓	
CO5:Students will be able to understand the role of state on some of the fundamental issues relating to the enforcement of human rights.	✓	✓	✓	✓	✓	✓				✓		✓	✓

Table 1422: Mapping between COs of 3LO225 and (POs& PSOs)

3LO225: Interpretation of Statute (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1: Understand parts of a statute and the meaning of the term 'interpretation of statutes'.	✓			✓		✓		✓	✓	✓			✓
CO2: To acquaint the students with the fundamental rules of interpretation of statutes.	✓			✓		✓		✓	✓	✓			✓
CO3: Acquaints the students with the role of different parts of a statute in interpreting the same.	✓			✓		✓		✓	✓	✓			✓
CO4: Acquaint the students with the materials which can be used to interpret a statute and their respective roles.	✓			✓		✓		✓	✓	✓			✓
CO5: Introduce students with the presumptions applicable during the interpretation of statutes and their applicability and the provisions excluding the jurisdiction of courts.	✓			✓		✓		✓	✓	✓			✓

Table 1423: Mapping between COs of 3LH226 and (POs& PSOs)

3LH226: Law of Carriage (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1: Learn about main contracts used in shipping sector, and how those are regulated.	✓		✓	✓		✓			✓	✓	✓		✓
CO2: Learn the legal framework for such contracts, how the different contracts are structured their subsequent liabilities and structure.	✓		✓	✓		✓			✓	✓	✓		✓
CO3: Understand the charter party agreement and bill of lading its kinds and features.	✓		✓	✓		✓			✓	✓	✓		✓
CO4: Understand the multi modal transport of goods and operators right liabilities and exemption.	✓		✓	✓		✓			✓	✓	✓		✓
CO5: Understand how these contracts are regulated in international conventions and national legislation.	✓		✓	✓		✓			✓	✓	✓		✓

Table 1424: Mapping between COs of 3LH227 and (POs& PSOs)

3LH227: White Collar Crime (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1: Understand the meaning and nature of crimes.	✓		✓			✓				✓		✓	✓
CO2: Analyze economic offences vis-à-vis traditional crimes.	✓	✓	✓		✓	✓						✓	✓
CO3: Trace the steps involved in the commission of these offences to detect any future issues.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
CO4: Learn the procedure of filing a case on various economic offences.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
CO5: Critically evaluate India's position in context of international economic offences.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓

Table 1425: Mapping between COs of 3LH226A and (POs& PSOs)

3LH226A:Affirmative Action and Disdriminative Justice(Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the various kinds of special suit.		✓	✓		✓	✓		✓	✓	✓	✓	✓	
CO2:Use correct legal terminologies.	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	
CO3:Describe the rules of pleadings and apply them correctly.	✓	✓	✓		✓		✓	✓		✓	✓	✓	
CO4:File execution proceedings in the civil courts.	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓
CO5:Apply the provisions of Limitation Act appropriately.	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓

Table 1426: Mapping between COs of 3LH227B and (POs& PSOs)

3LH227B:International Trade Law(Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On completion of this course the students will be able to appraise the WTO as an International institution	✓		✓		✓	✓	✓		✓		✓	✓	✓
CO2:They will understand its role in International trade.	✓		✓		✓	✓	✓		✓		✓	✓	✓
CO3:To analyze the various Trade Agreements and the Scope of WTO in the 21st century.	✓		✓		✓	✓	✓		✓		✓	✓	✓
CO4:To understand the core concepts of transnational transactions and their resolutions.	✓			✓				✓	✓	✓			✓
CO5:to critically examine the operation of international trade law in practical contexts.	✓			✓					✓	✓	✓		✓

Table 1427: Mapping between COs of 3LCL228 and (POs& PSOs)

3LCL228:Drafting,Pleading and Conveyance (Clinical)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Draft the legal deeds/documents/pleadings flawlessly.	✓		✓	✓	✓	✓	✓		✓	✓	✓		
CO2:Appreciate the abstract concepts and put forth an effective argument in drafting of civil pleading.	✓		✓	✓			✓	✓	✓	✓	✓		
CO3:Identify the issues involved, collect appropriate evidence, get true and correct information.	✓		✓	✓		✓	✓		✓	✓	✓		
CO4:Draft the legal deeds and documents with precision by following the appropriate legal format.	✓		✓	✓		✓	✓	✓	✓	✓	✓		
CO5:Scrutinize the legal documents and deeds.	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	

Table 1428: Mapping between COs of 3LC311 and (POs& PSOs)

3LC311: Civil Procedure Code - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1: Identify the jurisdiction of the civil court wherein a matter will lie and will understand the concept of ressubjudice and resjudicata.	✓			✓	✓		✓		✓	✓	✓		✓
CO2: Use correct legal terminologies and understand pleadings, plaints, setoff, counterclaim.	✓			✓	✓		✓		✓	✓	✓		✓
CO3: Describe the rules of appearance and non appearance of parties and apply them correctly.	✓			✓	✓		✓		✓	✓	✓		✓
CO4: File execution proceedings in the civil courts.	✓			✓	✓		✓		✓	✓	✓		✓
CO5: Understand the interim orders passed in the case and will have idea of the trial procedure judgement and decree.	✓			✓	✓		✓		✓	✓	✓		✓

Table 1429: Mapping between COs of 3LC312 and (POs& PSOs)

3LC312: Company Law - I													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1: Appreciate the importance of business associations, history and regulatory framework relating to the same.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	
CO2: Explain jurisprudential aspects of 'company' and classification of companies.	✓	✓			✓	✓				✓	✓	✓	
CO3: Elucidate the process of formation of different kinds of companies and commencement of business.	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
CO4: Describe the method of giving security for repayment of loan or other liabilities of a company.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓
CO5: Evaluate ultra vires actions, consequences and remedies available to the companies and their agents	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓

Table 1430: Mapping between COs of 3LO313 and (POs& PSOs)

3LO313: Law Relating to Patent (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1: Identify the different forms of intellectual property and describe the importance of protection of Intellectual Property Right.	✓		✓		✓	✓				✓	✓		✓
CO2: List out the criteria/essential requirements of Patent protection, duration, rights conferred and remedies provided.	✓		✓		✓	✓				✓	✓		✓
CO3: Apply the principles of Patent protection to legal problems correctly.	✓	✓	✓	✓	✓	✓	✓			✓	✓		✓
CO4: Analyse the issues related to infringement of patent.	✓	✓	✓	✓	✓	✓	✓			✓	✓		✓
CO5: Evaluate as to the procedure to obtain patent in India.	✓	✓	✓	✓	✓	✓	✓			✓	✓		✓

Table 1431: Mapping between COs of 3LO314 and (POs& PSOs)

3LO314:Law relating to Banking and Negotiable Instruments (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the Banking structure in India from point of view of banker customer relationship, the role of RBI its power and functions.	✓		✓	✓			✓	✓		✓			✓
CO2:Draft arguments for and against Banking and Non-Banking Financial Companies	✓		✓	✓			✓	✓		✓			✓
CO3:Undertaking acquisition of undertaking, suspension of business and winding up of regulations.	✓		✓	✓			✓	✓		✓			✓
CO4:Draft arguments in matters covering negotiations, presentment, related to legal issues	✓		✓	✓			✓	✓		✓			✓
CO5:Drafting policies related to banking sector.	✓		✓	✓			✓	✓		✓			✓

Table 1432: Mapping between COs of 3LH315 and (POs& PSOs)

3LH315:Health Law (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand and describe areas of health law and related issues.	✓	✓	✓		✓			✓		✓		✓	✓
CO2:Analyze lacuna within among the professional obligations of doctors and provides suitable remedies accordingly.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO3:To identify and synthesize various related provisions under constitution and other health related laws.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO4:Understand the concept of medical negligence, various errors and role of consent in medical practices.	✓	✓	✓		✓	✓		✓		✓		✓	✓
CO5:Discuss various remedies under criminal law and defences available in medical practitioner legal proceedings.	✓	✓	✓		✓	✓		✓		✓	✓	✓	✓

Table 1433: Mapping between COs of 3LH316 and (POs& PSOs)

3LH316:Law Relating to Women and Children (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the major social reforms during the 19 th century in India for the uplifting women.	✓	✓	✓	✓	✓				✓			✓	✓
CO2:List out the loopholes in law enforcement agencies in securing access to justice to women.	✓	✓	✓	✓	✓	✓			✓			✓	✓
CO3:Apply the different legislations enacted for women development and empowerment.	✓		✓		✓	✓	✓		✓	✓	✓		✓
CO4:Analyse the issues related to violence against women under the Protection of Women from Domestic Violence Act, 2005.	✓		✓		✓	✓	✓		✓	✓	✓		✓
CO5:Evaluate as against other the impact of specific laws enacted to secure justice to women against dowry related harassments, dowry deaths, molestation, sexual abuse and rape.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1434: Mapping between COs of 3LH315A and (POs& PSOs)

3LH315A:Merger and Acquisitions (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the different categories of mergers and acquisitions and the consequences of mergers and acquisitions.	✓		✓		✓	✓					✓		✓
CO2:List out the statutory basis of different routes in mergers and acquisitions and the role of regulatory agencies.	✓			✓		✓	✓	✓	✓	✓	✓	✓	✓
CO3:Apply the law and procedure of share acquisition of companies under the Companies Act,2013.	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
CO4:Analyse the procedural and substantive law applications of Mergers.	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
CO5:Evaluate as against other requirement of voluntary and compulsory disclosures during share acquisition and at the time of acquisition of voting rights.	✓			✓		✓	✓	✓	✓	✓	✓		✓

Table 1435: Mapping between COs of 3LH316B and (POs& PSOs)

3LH316B:International Humanitarian Law (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the origin of humanitarianism while evaluating historical events like the Nuremberg and Tokyo tribunals.	✓		✓		✓	✓		✓	✓		✓		✓
CO2:List out the different sources of International Humanitarian law.	✓		✓	✓			✓	✓	✓		✓		✓
CO3:Apply the rules governing the conduct of hostilities such as the General Limitations on the methods and means of hostilities	✓	✓	✓	✓		✓						✓	
CO4:Propose a solution to the issues related to the system of protecting power which includes the ICRC, UN war crimes tribunals and International Criminal Court.	✓					✓		✓	✓		✓		✓
CO5:Identify and evaluate relevant ethical and moral issues in legal situations	✓	✓	✓	✓	✓		✓					✓	✓

Table 1436: Mapping between COs of 3LCL317 and (POs& PSOs)

3LCL317:Alternate Dispute Resolution (Clinical)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:To analyze various legal frameworks on arbitration, mediation, conciliation and negotiation.	✓	✓	✓	✓	✓	✓			✓	✓		✓	✓
CO2:To understand and analyze the international legal frame work on arbitration and conciliation.	✓	✓	✓	✓	✓	✓			✓	✓		✓	✓
CO3:To apply procedures of ADR mechanisms in simulation exercise	✓	✓		✓						✓		✓	
CO4:Understand arbitral proceedings, foreign award their execution and termination.	✓	✓	✓	✓	✓	✓					✓	✓	✓
CO5:Analyze the other ADR mechanism such as lokadalat, gram nyayalayas, consumer forums and counseling centres.	✓	✓	✓	✓	✓	✓					✓	✓	✓

Table 1437: Mapping between COs of 3LM318 and (POs& PSOs)

3LM318:Moot Court Exercise													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On the conclusion of the Module, the students would be able to appreciate the research, oratorical and articulation skills required of a lawyer.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Students will be able to comprehend the practicalities of the justice system and the pivotal role the courts play in dispensation of justice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:They will also get a practical exposure to the techniques of client interviewing and the substantive as well as procedural steps involved in preparation of a brief by lawyers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Students will have practical experience of the professional aspects of the subjects they have studies.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:It will help students unearth their potential for the profession and the desirable improvements for the same.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1438: Mapping between COs of 3LP319 and (POs& PSOs)

3LP319:Project and Report Presentation													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:The student will have ample knowledge on the topic assigned.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:The students will analyze data and try to synthesize the available it.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:the students will demonstrate the understanding of ethical issues involved in the project report.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:The students will demonstrate capacity to improve by engagement and retention.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:The student will be able to demonstrate findings to advance research education theory and practice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1439: Mapping between COs of 3LC321 and (POs& PSOs)

3LC321:Civil Procedure Code - II and The Limitation Act													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the various kinds of special suit.	✓		✓	✓		✓	✓			✓	✓		
CO2:Use correct legal terminologies.	✓		✓	✓		✓	✓	✓	✓	✓	✓		✓
CO3:Describe the rules of pleadings and apply them correctly.	✓			✓	✓	✓	✓			✓	✓	✓	✓
CO4:File execution proceedings in the civil courts.	✓	✓	✓	✓		✓	✓	✓		✓	✓		✓
CO5:Apply the provisions of Limitation Act appropriately.	✓	✓		✓	✓		✓			✓	✓	✓	✓

Table 1440: Mapping between COs of 3LC322 and (POs& PSOs)

3LC322:Company Law - II													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand the powers of a Board vis-a-vis a General Meeting in view of statutory provisions and precedents.	✓	✓	✓		✓	✓				✓	✓		✓
CO2:Gives a bird's eye view of the composition and power equation of a Board and Inspection and Investigation of Board.	✓	✓	✓		✓	✓				✓	✓		✓
CO3:Give a comprehensive account of Meetings along with knowledge of Merger ,Acquisition, Amalgamation.	✓	✓	✓		✓	✓				✓	✓		✓
CO4:Get a clear idea on emphasize on the liquidation of a company and winding up.	✓	✓	✓		✓	✓				✓	✓		✓
CO5:Understand the basic underlying principles of corporate law.	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓



Table 1441: Mapping between COs of 3LC323 and (POs& PSOs)

3LC323:Principles of Taxation													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Describe the basic concepts relating to Income Tax Act, 1961 and GST Act, 2017	✓	✓	✓		✓	✓					✓		✓
CO2:Explain different types of incomes, their taxability, expenses and deductibility	✓		✓	✓		✓	✓	✓		✓	✓		✓
CO3:Interpret the provisions and cases relating to tax laws	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Learn various direct and indirect taxes and their implication in practical situations	✓	✓		✓		✓	✓	✓	✓	✓	✓		✓
"CO5:Understand the basic underlying principles of Tax principles in India. "	✓		✓		✓	✓				✓	✓		✓

Table 1442: Mapping between COs of 3LO324 and (POs& PSOs)

3LO324:Competition Law (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:To provide an understanding of Competition law, together with the ability to subject it to critical, legal and economic analysis	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:To apply Competition Law principles to the given cases.	✓		✓	✓	✓	✓	✓			✓	✓	✓	
CO3:Rationalise and suggest solutions to the fundamental issues of competition law.	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
CO4:To identify anti-competitive agreements and suggest remedies.	✓	✓	✓	✓	✓	✓				✓		✓	✓
CO5:To explain pricing strategies and abuse of dominant position.	✓		✓		✓	✓	✓			✓	✓	✓	

Table 1443: Mapping between COs of 3LO325 and (POs& PSOs)

3LO325:Law relating to Copyright and Trade Mark (Optional)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the different forms of intellectual property and describe their importance .	✓	✓	✓		✓	✓			✓		✓	✓	✓
CO2:List out the criteria/essential requirements of Assignment, Transmission, Licensing and Infringement.	✓			✓			✓	✓	✓	✓	✓		✓
CO3:Apply the principles of Trademark, collective mark and process of registration	✓			✓			✓	✓	✓	✓	✓		✓
CO4:Analyse the issues related to infringement of Copyright and Trademark.	✓	✓	✓	✓	✓	✓				✓		✓	✓
CO5:Propose a solution and remedies to the infringement problems in India.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓

Table 1444: Mapping between COs of 3LH326 and (POs& PSOs)

3LH326:Information Techonology Law and Cyber Crime (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Apply the provisions of Information Technology Act to understand digital signatures, electronic signature certificates their objectives and functions.	✓		✓	✓			✓			✓	✓		
CO2:Identify the need for regulation of Information technology and various regulatory models.	✓	✓	✓		✓	✓				✓	✓		✓
CO3:Evaluate as against others the interface between different human rights instruments and challenges faced by information technology.	✓	✓	✓		✓	✓		✓		✓	✓	✓	✓
CO4:Analyse the laws related to cyber defamation through information technology	✓		✓		✓	✓				✓			
CO5:propose a solution to privacy related issues due to use of computer technology and List out the legal challenges of the information society and the different forms of cyber crimes.	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓

Table 1445: Mapping between COs of 3LH327 and (POs& PSOs)

3LH327:Investment Law (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Relate the history and evolution of investment law and to comment and evaluate the impact of investment commitments on domestic legal systems	✓	✓	✓		✓	✓		✓		✓	✓		✓
CO2:Investigate and analyse problems, concepts and theories in relation to investment law and understanding the capital market.	✓		✓	✓			✓	✓	✓	✓	✓		
CO3:Analyse and explain the application of principles of investment law in the field of securities.	✓		✓	✓			✓	✓	✓	✓	✓		
CO4:Assess the soundness of the decision taken by SEBI and its regulatory mechanism.	✓			✓		✓	✓	✓	✓	✓			✓
CO5:Interpret the provisions of investment law with regards to Unit Trust of India and venture capital.	✓			✓		✓	✓	✓	✓	✓			✓

Table 1446: Mapping between COs of 3LH326A and (POs& PSOs)

3LH326A:Gender Justice and Feminist (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Analyze the philosophical undercurrents of social security, constitutional provisions and developments at the international level.	✓	✓	✓		✓			✓		✓		✓	
CO2:Analyze the various concept relating to industrial dispute.	✓	✓	✓		✓	✓	✓			✓	✓	✓	
CO3:Discuss the intricacies involved in the payment of wages, especially the deductions.	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓
CO4:Comprehend the legal provisions with regards to standing orders collective bargaining.		✓	✓		✓	✓		✓		✓	✓	✓	✓
CO5:Apply the legal provisions in the contemporary debate on Employees Provident Fund and workers' vulnerability in India.	✓	✓		✓	✓	✓	✓			✓	✓	✓	✓

Table 1447: Mapping between COs of 3LH327B and (POs& PSOs)

3LH327B:International Refugee Law (Honours)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Analyse the principles and process of refugee status determination.	✓		✓	✓					✓	✓			
CO2:Identify and describe the various concept taught in the respective module.	✓		✓	✓	✓	✓			✓	✓	✓	✓	✓
CO3:Compare, contrast and reflect on theoretical concepts underlying refugee protection and analyse such legal concepts.	✓						✓						✓
CO4:Describe and identify the legal principles and methods to ascertain refugee problems and apply the concept correctly to legal issues on the ground.	✓		✓	✓	✓	✓	✓	✓	✓			✓	✓
CO5:Evaluate the refugee protection as against protection of the other displaced groups and articulate the problem areas for the deficiency.	✓			✓	✓	✓				✓			✓

Table 1448: Mapping between COs of 3LCL327 and (POs& PSOs)

3LCL327:Moot Court Exercise and Internship (Clinical)													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:On the conclusion of the Module, the students would be able to appreciate the research, oratorical and articulation skills required of a lawyer.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:Students will be able to comprehend the practicalities of the justice system and the pivotal role the courts play in dispensation of justice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:They will also get a practical exposure to the techniques of client interviewing and the substantive as well as procedural steps involved in preparation of a brief by lawyers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Students will have practical experience of the professional aspects of the subjects they have studies.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:It will help students unearth their potential for the profession and the desirable improvements for the same.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1449: Mapping between COs of 3LM328 and (POs& PSOs)

3LM328:Seminar and Comprehensive Viva - Voice													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Understand and analyze the basic legal problems and do team work to solve them cooperatively with others on joint assignments.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
"CO2:Provide legal assistance either as paralegal volunteers or student volunteers to the common people about basic legal concepts which are essential in their day to day life. "	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:Learn to work with cultural diversity outside the class with a variety of ethnic, social, or educational backgrounds in the context of service motive.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:The students will demonstrate capacity to improve by engagement and retention.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5:The student will be able to demonstrate findings to advance research education theory and practice.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

## 11.3.4 LL.M

Table 1450: Mapping between COs of CPI01 and (POs& PSOs)

CPI-01:Research Method and Legal Writing													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the procedure relating to identification of research problem, hypotheses and research design.	✓		✓	✓	✓	✓			✓	✓		✓	✓
CO2:List out the different types of legal research.	✓	✓	✓		✓		✓	✓		✓	✓	✓	✓
CO3:Apply different research methods and research tools.	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
CO4:Evaluate as against other the different forms of research designs.	✓		✓	✓	✓		✓	✓	✓		✓	✓	
CO5:Propose a solution to the the various issues related to use of statistical methods and computers in legal research.	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓

Table 1451: Mapping between COs of CPI02 and (POs& PSOs)

CPI02:Comparative Public Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the shortfalls in the system of rights protection in India.	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
CO2:List out. The pattern of judicial process in the three concerned countries.	✓	✓	✓	✓	✓	✓	✓		✓			✓	✓
CO3:Apply the constitutional law relating to distribution of powers between the Centre and States in each of the designated states as well as the ambit of executive powers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
CO4:Analyze the pros and cons of the system of judicial redressal in the concerned jurisdictions.	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
CO5:Evaluate as against other the constitutional systems and law in the selected three jurisdictions.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1452: Mapping between COs of SPIA01 and (POs& PSOs)

SPIA01:Competition Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify and describe the concept taught in the respective module.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:List out the essential characteristic of the concept	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3:Apply the concept correctly to legal problems in the area of competition Law.	✓	✓	✓	✓	✓			✓	✓	✓		✓	✓
CO4:Analyse the legal concept with the help of various case Laws.	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓
CO5:Evaluate as against other events of a similar nature and articulate the problem in areas for the deficiency.	✓	✓	✓		✓	✓	✓			✓	✓		✓

Table 1453: Mapping between COs of SPIA02 and (POs& PSOs)

SPIA02:Banking and Insurance Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify the significance of different types of negotiable instruments.	✓	✓	✓	✓	✓	✓	✓				✓		✓
CO2:Analyze the flaws in existing legislations.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
CO3:Develop skills to solve disputes related to negotiable instruments	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:Develop understanding towards various insurances and the policies formulated.	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
CO5:Analyze the flaws in insurance business.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓

Table 1454: Mapping between COs of SPIA03 and (POs& PSOs)

SPIA03:Company Law and Governance													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Have an indepth understanding about different business organisation and comprehend importance of company form of business organisation with its incorporation and administration	✓	✓	✓			✓	✓	✓	✓		✓		✓
CO2:Understanding different concepts related to Corporate management and governance, Institutional investment, reconstruction, merger and amalgamation.	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓
CO3:Analyze the various remedies against the corporate abuses and their impact on globalisation.	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓
CO4:Analyze and acquire knowledge of various Mutual Fund and other collective schemes.	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓
CO5:Analyze the various remedies against corporate abuses and the various provisions of Investors protection.	✓	✓	✓			✓	✓	✓			✓	✓	✓

Table 1455: Mapping between COs of CPII-03 and (POs& PSOs)

CPII-03:Law and Justice in Globalizing World													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Identify and describe the concept taught in the respective module.	✓	✓	✓	✓			✓	✓				✓	✓
CO2:List out the essential aspects of Conflict of Laws.	✓	✓	✓	✓		✓	✓	✓		✓			✓
CO3:Apply the concept correctly to legal problems.	✓	✓	✓	✓		✓		✓	✓		✓	✓	✓
CO4:Analyse the legal concept and list out the relevant rules and principles that determine the jurisdiction of the courts.	✓	✓	✓	✓	✓						✓		
CO5:Evaluate the various approaches to choice of law, the role of the national government in both the domestic and international conflict of law problems.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 1456: Mapping between COs of SPIIA01 and (POs& PSOs)

SPIIA01: Intellectual Property Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1: Understand the Conceptual basis of IPR protection and different works protected.	✓	✓	✓	✓	✓	✓							
CO2: Expose themselves to various aspects of different rights guaranteed under the IPR regime, like the concept of Moral Rights and Material Rights.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3: Students will be able to analyse the various issues and challenges of infringement.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4: Students will analyse and understand the process of sui generis system of protection of IPR.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5: Students will understand the various convention and the United Nations treaties with regards to IPR.	✓	✓	✓	✓	✓								

Table 1457: Mapping between COs of SPIIA02 and (POs& PSOs)

SPIIA02: International Trade Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1: On completion of this unit the students will be able to appraise the WTO as an International institution and its role in International trade.	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2: The student will be able to understand the core concepts of transnational transactions and their resolutions.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO3: The student will develop an understanding regarding UNCITRAL as settlement of dispute.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4: Students will understand the sale, carriage, and documentary transactions.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO5: Students will understand the arbitration proceeding and the working of the UNCITRAL model and the enforcement and recognition of foreign awards.	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓

Table 1458: Mapping between COs of SPIIA03 and (POs& PSOs)

SPIIA03: Cyber Law													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1: Identify the need for regulation of information technology in India and also Lessig's model of regulation.	✓	✓	✓	✓	✓	✓	✓	✓		✓			✓
CO2: List out the legal challenges of the information society and the different forms of cyber-crimes.	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
CO3: Apply the provisions of Information Technology Act.	✓	✓	✓			✓	✓	✓		✓		✓	✓
CO4: Analyse the laws related to defamation through information technology.	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
CO5: Evaluate as against other the interface between different human rights instruments and the challenges posed by information technology.	✓	✓	✓			✓	✓	✓		✓	✓		✓

Table 1459: Mapping between COs of D-1 and (POs& PSOs)

D-1:Dissertation and Viva Voce													
Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1:Students will be able to develop research skills which commensurate with the accomplishment of masters degree.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO2:They will be able to produce a coherent and logically argued piece of writing that demonstrate competence in research and ability to operate independently.	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓
CO3:They will analyse and apply the knowledge about research design and methods applied to develop the dissertation.	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CO4:They will be able to understand and analyse the research design, methodology, ethics, theoretical arguments, and locate a piece of research within these.	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓
CO5:They will be able to identify and refine an appropriate research question and synthesize the knowledge and skills previously gained and apply these to an in depth study.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

## 12 Summary

In this document, Program Outcomes, Program Specific Outcomes, Course Outcomes, and their mapping with POs and PSOs for different program of studies are represented in a tabular form. Basic needs of mapping, key role of outcome based education, competency based evaluation/assessment are also highlighted in this document.