DEPARTMENT OF STUDIES IN COMMERCE

2023-24

Programme Outcomes, Course Outcome & Course Articulation Matrix with Tables

Program Outcomes

PO1. Domain knowledge: Enhance the in-depth knowledge of various fields of business and commerce such as Accounting, International Accounting, Financial derivatives, Business Environment, international business, Research Methodology, and Tax planning, etc.,

PO2. Communication Skills: Build strong communication skills and interpersonal skills among the students.

PO3. Critical thinking: Encourage students to analyze case studies and their outcomes with the help of theoretical framework.

PO4. Problem solving: Students are encouraged to apply the knowledge gained through the programme to solve issues and problems that arise in the respective domains.

PO5. Analytical reasoning: Students will develop the reasoning abilities through analysis made by using various analysis tools to support their ideas and projects.

PO6. Research skills: Inculcate the knowledge of identifying, formulating, review of literature to analyse the complex business problems.

PO7. Cooperation/Team work: Build team spirit among the students to face real-life situations in their respective career domains.

PO8. Scientific reasoning: Encourage students to develop the ability to draw inferences and conclusions based on quantitative and qualitative data and analysis.

PO9. Reflective thinking: Interact with industry personnel, alumni and gain knowledge from the experiences shared by them.

PO10. Information/digital literacy: Inculcate the knowledge of Application of information technology in the field of Commerce.

PO11. Self-directed learning: Inculcate the ability to take-up projects, identify and compile resources required for the project and follow through for completion

PO12. Multicultural competence: Interact with assorted groups engaged in serving the society in the multicultural background.

PO13. Moral and ethical awareness/reasoning: Educate the students on business ethics, values and responsibility of business towards various stakeholders.

PO14. Leadership readiness/qualities: Inculcate the ability to form team and motivate and inspire the team members towards achieving the set goals.

PO15. Lifelong learning: Imparting career enhancement skills by providing training in various competitive exams.

I SEMESTER

ADVANCED ACCOUNTING

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

Course Outcome:

CO1: Provides detailed insight into various Indian accounting standards

CO2: Stages and process of standards settings by ICAI in India along with compliance and applicability of accounting standards in India.

CO3: Understand the difference between Accounting Standard, IFRS, IASB and FASB and also gain knowledge on Convergence of Indian Accounting Standards with IFRS

CO4: Understand financial disclosures and preparation of accounting reporting.

Course Articulation Matrix

CO\PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**	**PO 13**	**PO 14**	**PO 15**
CO1	3	2	-	-	-	-	-	-	1	1	1	1	-		1
CO2	3	3	1	1	1	-	-	-	1	-	1	-	1	1	-
CO3	3	2	-	-	-	-	-	-	1	1	-	1	-	-	1
CO4	3	3	1	-	1	-	-	-	1	-	-	1	-	-	1
Weighted Average	**3**	**2.25**	**1**	**1**	**1**	**-**	**-**	**-**	**1**	**1**	**1**	**1**	**1**	**1**	**1**

HC02: FINANCIAL MANAGEMENT

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours: 5 per week**

Course Outcome:

CO1: Know the relativity of capital investment decisions and financial Policies to business valuations.

CO2: Application of different methods of cost of capital to ascertain the overall cost of capital of the firm,

CO3: Application of financial leverage to form long-term financial policies for business.

CO4: Ascertain common investment criteria and project cash flows with associated corporate project evaluation.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	3	-	-	-	-	-	3	1	2	-	1	-	2
CO2	3	3	3	1	1	-	-	3	3	-	3	-	1	-	2
CO3	3	2	3	-	-	-	-	3	3	1	3	-	1	-	2
CO4	3	3	3	-	1	-	-	3	3	1	3	-	1	-	2
Weighted Average	**3**	**2.25**	3	**1**	**1**	-	-	**3**	**3**	**1**	**2.75**	-	**1**	-	**2**

SC 03: MARKETING MANAGEMENT

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours: 5 Per Week**

Course Outcomes:

CO: Learn the Importance of how Demographic, Cultural and Institutional factors Shape the Global Marketing Environment

CO2: Depict Various Methods through which a firm can promote their products in markets and be able to make All the necessary decisions needed for promoting the product in markets.

CO3: Figure Out the Implications of Current Trends in Social Media Marketing and Emerging Marketing Trends

CO4. Portray decisions related to designing channel as well as physical distribution systems for making available the products in the markets.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	1	2	2	1	-	-	2
CO2	3	3	-	1	1	-	-	-	1	2	2	-	-	2	2
CO3	3	2	-	-	-	-	-	-	1	2	2	1	-	2	2
CO4	3	3	-	-	1	-	-	-	1	2	2	1	-	2	2
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**-**	**-**	**-**	**1**	**2**	**2**	**1**	**-**	**2**	**2**

HC 04: HUMAN RESOURCE MANAGEMENT

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

Course Outcome:

CO1: Understanding of the concept, functions and process of human Resource management.

CO2: Provide practical knowledge on preparation of job description and job specification.

CO3: Enhance the practical knowledge on human resource planning in an organization.

CO4: Design and formulate various HRM processes such as Recruitment,

Selection, Training, Development, Performance appraisals, compensation and rewards system.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	-	-	2	-	1	1	2
CO2	3	3	-	1	1	-	-	-	-	-	2	-	1	1	2
CO3	3	2	-	-	-	-	-	-	-	2	2	-	1	2	2
CO4	3	3	-	-	1	-	-	-	-	2	2	-	1	2	2
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**-**	**-**	**-**	**-**	**2**	**2**	**-**	**1**	**1.5**	**2**

SC01: INTERNATIONAL BUSINESS ENVIRONMENT

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 per week

6. Course Outcomes:

CO1. Learn the dynamics of the international business environment from a competitive and economic perspective.

CO2. Depict the various provisions relating to international trade and investment theories, and Transnational Corporations and its recent trends in TNCs.

CO3. Know about the international investments and recent trends in FDI Flows.

CO4. Outline the International business ethics and International Management.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	1	2	2	-	2	2	2
CO2	3	3	-	1	1	-	-	-	1	2	2	-	2	2	2
CO3	3	2	-	-	-	-	-	-	1	2	3	-	2	2	2
CO4	3	3	-	-	1	-	-	-	1	2	3	-	2	2	2
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**-**	**-**	**-**	**1**	**2**	**2.5**	**-**	**2**	**2**	**2**

SC 02: STATISTICS FOR BUSINESS DECISIONS

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours:5 per week**

Course Outcomes

CO 1: Development of logical reasoning ability in students.

CO 2: Knowledge about the applicability of various parametric and non-parametric tests for analysis of data.

CO 3: Ability to use SPSS to solve statistical problems.

CO 4: Ability to make decisions under uncertain business situations through analysis.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	3	1	3	-	1	-	3
CO2	3	3	-	1	1	-	-	-	3	1	3	-	1	-	3
CO3	3	2	-	-	-	-	-	-	3	2	3	-	1	-	3
CO4	3	3	-	-	1	-	-	-	3	2	3	-	1	-	3
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**-**	**-**	**-**	**3**	**1.5**	**3**	**-**	**1**	**-**	**3**

SC03: ADVANCED AUDITING

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours:5 per week**

Course Outcomes

CO-1: Knowing the Indian Auditing Standards and Audit Procedures.

CO-2: Learning the auditing practice of different sectors.

CO-3: Preparation of audit report as per CARO 2016.

CO-4: Practice of audit through online.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	2	-	2	1	3	2	3
CO2	3	3	-	1	1	-	-	-	2	-	2	1	3	2	2
CO3	3	2	-	-	-	-	-	-	2	2	2	1	3	2	3
CO4	3	3	-	-	1	-	-	-	2	2	2	1	3	2	3
Weighted Average	**3**	**2.25**	-	**1**	**1**	-	-	-	**2**	**2**	**2**	**1**	**3**	**2**	**2.75**

II SEMESTER

HC05: ORGANISATIONAL BEHAVIOUR

Total Credits:4 Credit Pattern: 3:1:0 No of hours:5 per week

Course Outcomes:

CO1. Comprehend the conceptual frame work of management and Organizational behavior

CO2. Understanding the complexities associated with management of individual behavior and group behavior in the organization.

CO3. Application of various motivational theories in anchoring the behaviour of employees in an organization

CO4. Apply creative, critical and reflective thinking to address organizational opportunities and challenges.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	2	1	2	2	3	3	2
CO2	3	3	-	1	1	-	-	-	2	1	2	2	3	3	2
CO3	3	2	-	-	-	-	-	-	2	1	2	2	3	3	2
CO4	3	3	-	-	1	-	-	-	2	1	2	2	3	3	2
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**-**	**-**	**-**	**2**	**1**	**2**	**2**	**3**	**3**	**2**

HC06: CORPORATE GOVERNANCE

Total Credits: 4 Credit Pattern: 3:1:0 No of hours: 5 Per Week

COURSE OUTCOME:

CO1: Know the Conceptual framework of Corporate Governance around the world and in India,

CO2: Enhancing the Knowledge on Ethics in Business and the Code of Conduct practiced in various Corporations.

CO3: Learn the efforts of governments and various committees in enacting good governance systems in Indian Corporations,

CO4: Realize the roles and responsibilities of CEO, CFO, Company Secretary and other key managerial personnel

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	2	-	2	1	3	2	2
CO2	3	3	-	1	1	-	-	-	2	-	2	2	3	-	2
CO3	3	2	-	-	-	-	-	-	2	-	2	2	3	2	2
CO4	3	3	-	-	1	-	-	-	2	-	2	3	3	2	2
Weighted Average	**3**	**2.25**	-	**1**	**1**	-	-	-	**2**	-	**2**	**2**	**3**	**2**	**2**

HC07: INTERNATIONAL BUSINESS

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours: 5 per week**

Course Outcome:

CO1: Identify the key aspects of international trade and calculate its potential gains to participating nations.

CO2: Recognize the characteristics of foreign exchange markets

CO3: Identify the different countries currency regimes around the world.

CO4: Evaluate cross-border investment opportunities, and describe a multinational firm's decision-making process

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	3	1	2	2	-	-	-
CO2	3	3	-	1	1	-	-	-	-	1	3	3	-	-	-
CO3	3	2	-	-	-	-	-	-	3	1	2	3	-	-	-
CO4	3	3	-	-	1	-	-	-	3	1	3	2	-	-	-
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**-**	**-**	**-**	**3**	**1**	**2.25**	**2.25**	**-**	**-**	**-**

SC 04: CAPITAL MARKET INSTRUMENTS

Total Credits: 4 Credit Pattern: 3:1:0 No of hours:5 per week

1. Course Outcomes:

CO-1: learning conceptual and practical knowledge on Capital market and its operations in India

CO-2: Valuation of financial securities like bond, debenture and stocks.

CO-3: Mechanism and application of forwards/futures, options, financial swaps.

CO-4: Learn online trading mechanism of derivatives instruments.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	-	2	3	-	-	-	3
CO2	3	3	-	1	1	-	-	-	3	2	3	-	-	-	3
CO3	3	2	-	-	-	-	-	-	3	-	3	-	-	-	3
CO4	3	3	-	-	1	-	-	3	3	2	3	-	-	-	3
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**-**	**-**	**3**	**3**	**2**	**3**	**-**	**-**	**-**	**3**

SC 05: SERVICES MARKETING

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours: 5 per week**

Course Outcome:

CO1: Learn the Concept of Services and intangible products

CO2: Comprehend the characteristics of service industry

CO3: Visualise the significance of service innovation and design

CO4: Employ various modes of service delivery in service organizations

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	1	-	2	-	1	-	2
CO2	3	3	-	1	1	-	-	-	2	2	2	-	1	-	2
CO3	3	2	-	-	-	-	-	-	2	2	2	2	1	-	2
CO4	3	3	-	-	1	-	-	-	1	2	2	2	1	-	2
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**-**	**-**	**-**	**1.5**	**2**	**2**	**2**	**1**	**-**	**2**

SC 06: SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT

Total Credits: 4 Credit Pattern: 3:1:0 No of hours:5 per week

Course Outcomes

CO-1: Know the various investment avenues available for investment and assess the risk and return associated with investments alternatives.

CO-2: Application of fundamental and technical analysis for security valuation

CO-3: Enhance the knowledge in various theories of portfolio analysis, construction and performance evaluation of portfolios

CO-4: Acquire the practical knowledge on online trading of different financial securities.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	-	-	1	-	-	-	3
CO2	3	3	-	1	1	-	-	-	-	1	3	-	-	-	3
CO3	3	2	-	-	-	-	-	-	-	1	3	-	-	-	3
CO4	3	3	-	-	1	-	-	-	-	1	3	-	-	-	3
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**-**	**-**	**-**	**-**	**1**	**2.5**	**-**	**-**	**-**	**3**

SC07: COMPUTER APPLICATIONS IN COMMERCE

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours: 5 per week**

Course Outcomes:

CO1: The application of accounting software for preparation of financial statements by using tally ERP.9.

CO2: Application of capital budgeting techniques such as NPV, IRR, PV etc., by using MS-Excel.

CO3: Analyze the research data by using SPSS software.

CO4: Filing of income tax return Forms and TDS Return and E-filing of indirect taxes return and filing of online application for PAN and TAN.

CO5: Preparation of financial report by using XBRL.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	2	2	3	-	-	-	-	2
CO2	3	3	-	1	1	-	-	2	2	3	3	-	-	-	3
CO3	3	2	-	-	-	-	-	2	2	3	3	-	-	-	2
CO4	3	3	-	-	1	-	-	2	2	3	3	-	-	-	3
Weighted Average	**3**	**2.25**	-	**1**	**1**	-	-	**2**	**2**	**3**	**3**	-	-	-	**2.25**

OE01: STOCK MARKETS AND INVESTEMENT DECISIONS

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours: 5 per week**

Course Outcomes:

CO1: Enhancing the knowledge on theoretical and practical concepts of Indian stock markets and Stock Market Instruments

CO2: Understanding the Trading mechanism in stock market

CO3: Analyze the Stock price movement using BSE-SENSEX and NSE-NIFTY as benchmark indices

CO4: Learning online trading mechanism

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	3	3	-	1	1	-	-	-	-	1	-	-	-	-	2
CO3	3	2	-	-	-	-	-	-	2	1	2	-	-	-	2
CO4	3	3	-	-	1	-	-	-	2	1	2	-	-	-	2
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**-**	**-**	**-**	**2**	**1**	**2**	**-**	**-**	**-**	**2**

OE02: MANAGEMENT OF ENTERPRISES

Total Credits:4 **Credit Pattern: 3:1:0** **No of hours: 5 per week**

Course Outcomes:

CO1: Understanding the distinct entrepreneurial traits.

CO2: Know the parameters to assess opportunities and constraints for new business ideas and the role of Central and State Government institutions in the development of Entrepreneurship in India

CO3: Understand the systematic process to select and screen a business idea and write a business plan.

CO4: Design strategies for successful implementation of ideas.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	-	-	1	1	1	-	-
CO2	3	3	-	1	1	-	-	-	1	-	1	1	2	-	2
CO3	3	2	-	-	-	-	-	-	-	-	1	1	2	-	2
CO4	3	3	-	-	1	-	-	-	1	-	1	1	2	-	2
Weighted Average	**3**	**2.25**	-	**1**	**1**	-	-	-	**1**	-	**1**	**1**	**1.75**	-	**2**

III SEMESTER

HC 08: BUSINESS RESEARCH METHODS

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours:5 per week**

Course Outcome:

CO1: Identify the Research problems in the area of Business and Commerce

CO 2: Write a literature review that synthesizes and evaluates literature in a specific topic area to justify a research question

CO 3: Apply appropriate research design and methods to address a specific research question and acknowledge the ethical implications of the research

CO 4: Develop a research proposal/research paper on the basis their study.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	3	2	-	3	-	-	-	-	-	-	-	-	-	2
CO2	3	3	-	-	3	3	-	-	-	-	3	-	3	-	2
CO3	-	3	3	3	3	3	-	-	3	3	3	-	3	-	3
CO4	3	-	3	-	2	3	-	-	3	3	3	-	3	-	3
Weighted Average	**3**	**3**	**2.7**	**3**	**2.75**	**3**	-	-	**3**	**3**	**3**	-	**3**	-	**2.5**

HC 09: OPERATIONS RESEARCH

Total Credits:4 Credit Pattern: 4:1:0 No of hours: 5 per week

1. Course Outcomes:

CO1: Application of Linear Programming in cost minimization and profit maximization

CO2: Conceptual knowledge and practical applications on Transportation and Assignments

CO3: Understand the usage of game theory and Simulation for Solving Business Problems

CO4: Understand the applicability of replacement model in cost analysis

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	2	-	-	-	-	-	2
CO2	3	3	-	1	1	-	-	-	3	1	3	-	-	-	3
CO3	3	2	-	-	-	-	-	-	2	-	3	-	-	-	2
CO4	3	3	-	-	1	-	-	-	3	1	3	-	-	-	3
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**-**	**-**	**-**	**2.25**	**1**	**3**	**-**	**-**	**-**	**2.25**

SC08: ENTREPRENEURSHIP DEVELOPMENT

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours:5 per week**

Course Outcomes:

CO 1: Understanding the distinct entrepreneurial traits.

CO 2: Know the parameters to assess opportunities and constraints for new business ideas.

CO 3: Write a business plan.

CO 4: know the role of Central and State Government institutions in the development of Entrepreneurship in India.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	2	-	-	2	-	-	-	-	2	3
CO2	3	3	-	1	1	3	-	-	3	-	2	-	-	3	3
CO3	3	2	-	-	-	2	-	-	2	-	2	-	-	2	3
CO4	3	3	-	-	1	3	-	-	3	-	2	-	-	3	3
Weighted Average	**3**	**2.25**	-	**1**	**1**	**2.25**	-	-	**2.25**	-	2	-	-	**2.25**	**3**

SC 09: INTERNATIONAL HUMAN RESOURCE MANAGEMENT

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours:5 per week**

Course Outcomes:

CO 1: Demonstrate an understanding of key terms, theories/concepts and practices within the field of IHRM

CO 2: Develop and ability to undertake qualitative and quantitative research and apply this knowledge in the context of an independently constructed work

CO 3: Identify and appreciate the significance of ethical issues in HR practices and the management of people in the workplace.

CO 4: Critically appraise the impact of cultural and contextual factors in shaping human resource practices in MNCs

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	-	-	-	-	-	-	-	-	-	-	1	-	-	1
CO2	1	2	-	-	3	-	-	-	-	-	2	2	2	-	1
CO3	3	2	-	2	-	-	-	-	-	-	2	3	2	-	3
CO4	3	2	-	2	-	-	-	-	-	-	2	3	2	-	3
Weighted Average	**2.5**	**2**	**-**	**2**	**3**	**-**	**-**	**-**	**-**	**-**	**2**	**2.25**	**2**	**-**	**2**

SC 10: INTERNATIONAL FINANCIAL MANAGEMENT

Total Credits:4 Credit Pattern: 3:1:0 No of hours:5 per hour

Course Outcomes

CO-1: Enhance the knowledge on international financial environment.

CO-2: Understanding of Balance of Payment in Indian Scenario

CO-3: Practical approach on determination of foreign exchange rates

CO-4: Application of capital budgeting, cost of capital and working capital management in international transactions.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	2	-	3	-	-	-	3
CO2	3	3	-	1	3	-	-	-	2	-	3	-	-	-	3
CO3	3	2	-	-	3	-	-	-	2	-	3	-	-	-	3
CO4	3	3	-	-	3	-	-	-	2	-	3	-	-	-	3
Weighted Average	**3**	**2.25**	-	**1**	**3**	-	-	-	**2**	-	**3**	-	-	-	**3**

SC 11: PROJECT MANAGEMENT

Total Credits: 4 per week **Credit Pattern: 3:1:0** **No of hours: 5**

Course Outcomes:

CO-1: Students would learn project **planning & analysis and implementation.**

CO-2: Describe the method of generating project ideas and screening them

CO-3: Students would learn to prepare a detailed project plan.

CO-4: To understand various financial and technical aspects regarding project management.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	2	-	2	1	-	-	-	1
CO2	3	3	-	1	1	-	-	3	1	3	1	-	-	-	1
CO3	3	2	-	-	-	-	-	2	-	2	1	-	-	-	1
CO4	3	3	-	-	1	-	-	3	1	3	1	-	-	-	1
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**-**	**-**	**2.25**	**1**	**2.25**	**1**	**-**	**-**	**-**	**1**

SC 12: ELECTIVE GROUP A-BUSINESS TAXATION

PAPER1: GOODS AND SERVICES TAX AND CUSTOMS DUTY

Total Credits:4 Credit Pattern: 3:1:0 No of hours:5 per week

Course Outcomes

CO-1: Overview of Good and Services Tax system and structure in India.

CO-2: Practical application of levy, collection, valuation and ITC under GST

CO-3: Filing of online GST return

CO-4: Understanding the concept of Custom's duty, its valuation and duty drawback in India

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	3	3	3	-	3	2	2
CO2	3	3	-	1	1	-	-	-	3	3	3	-	3	3	3
CO3	3	2	-	-	-	-	-	-	3	3	3	-	3	2	2
CO4	3	3	-	-	1	-	-	-	3	3	3	-	3	3	3
Weighted Average	**3**	**2.25**	-	**1**	**1**	-	-	-	**3**	**3**	**3**	-	**3**	**2.25**	**2.25**

SC 13: ELECTIVE GROUP B – FINANCIAL ACCOUNTING

PAPER-1: ACCOUNTING FOR SPECIAL TRANSACTIONS

Total Credits:4 **Credit Pattern:3:1:0** **No of hours:5**

Course Outcomes:

CO 1: Know the measurement and disclosure of Interim Financial Reporting and Segment Reporting.

CO 2: Understand the accounting concept relating to levy of income tax

CO 3: Prepare accounting for Goods and Services Tax.

CO 4: Know and understand fair value and its applications in accounting.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	2	-	2	-	-	-	2
CO2	3	2	-	1	1	-	-	-	2	-	2	-	-	-	2
CO3	2	3	2	-	-	-	-	-	3	-	3	-	-	-	3
CO4	3	3	-	-	1	-	-	-	3	-	3	-	-	-	3
Weighted Average	**2.75**	**2.5**	**2**	**1**	**1**	**-**	**-**	**-**	**2.5**	**-**	**2.5**	**-**	**-**	**-**	**2.5**

SC 14 - ELECTIVE GROUP C: FINANCIAL MANAGEMENT

PAPER-1: CORPORATE RESTRUCTURING

Total Credits: 4 per week **Credit Pattern: 3:1:0** **No of hours: 5**

Course Outcomes:

After completion of this course, the students would be able to

CO-1: Explain the concept of corporate restructuring and major forms of corporate restructuring.

CO-2: Describe the process of value creation under different forms of Merger and Acquisition

CO-3: Evaluate the operational & financial performance of Merger and Acquisition

CO-4: Various legal aspects regarding mergers/amalgamations and acquisitions/takeovers

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	3	2	-	3	-	-	-	3
CO2	3	3	-	1	1	-	-	3	3	1	3	-	-	-	3
CO3	3	2	-	-	-	-	-	3	2	-	3	-	-	-	3
CO4	3	3	-	-	1	-	-	3	3	1	3	-	-	-	3
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**-**	**-**	**3**	**2.25**	**1**	**3**	**-**	**-**	**-**	**3**

SC15 - ELECTIVE GROUP D: HUMANRESOURCE MANAGEMENT PAPER1:

STRATEGIC MANAGEMENT OF HUMAN RESOURCES

TotalCredits:4 Credit Pattern: 3:1:0 No of hours:5

6. Course Outcomes:

CO 1: Understand and discuss concepts of SHRM.

CO 2: Application of SHRM techniques in various organizational situations

CO 3: Evaluate the strengths and weaknesses of SHRM practices in organizations.

CO 4: Identify and assess ethical, environmental and/or sustainability considerations in SHRM decision-making and practice.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	-	-	-	-	-	-	-	-	-	-	1	-	-	1
CO2	1	2	-	-	3	-	-	-	-	-	2	2	2	-	2
CO3	3	2	-	2	-	-	-	-	-	-	2	3	2	-	3
CO4	3	2	-	2	-	-	-	-	-	-	2	3	2	-	3
Weighted Average	**2.5**	**2**	**-**	**2**	**3**	**-**	**-**	**-**	**-**	**-**	**2**	**2.25**	**2**	**-**	**2.25**

SC16 - ELECTIVE GROUP E: MANAGEMENT ACCOUNTING

PAPER 1: MARGINAL COSTING AND DECISION MAKING

Total Credits:4 Credit Pattern: 3:1:0 No of hours:5 per week

Course Outcomes

CO-1: Application of tools and techniques of marginal costing in managerial decision making

CO-2: Practical knowledge on overhead analysis and its appropriate Applicability

CO-3: Enhance knowledge on application of Costing standards in Cost Audits.

CO-4: Preparation of Break-Even chart for taking managerial decisions.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	3	2	-	3	-	-	-	3
CO2	3	3	-	1	1	-	-	3	3	1	3	-	-	-	3
CO3	3	2	-	-	-	-	-	3	2	-	3	-	-	-	3
CO4	3	3	-	-	1	-	-	3	3	1	3	-	-	-	3
Weighted Average	**3**	**2.25**	-	**1**	**1**	-	-	**3**	**2.25**	**1**	**3**	-	-	-	**3**

IV SEMESTER

HC 10: INTERNATIONAL ACCOUNTING

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours:5**

Course Outcome:

CO1: Familiarize and understand the International Financial Reporting Standards (IAS or IFRS) and its application.

CO2: Application of different types of financial exposures in IFRS.

CO3: Enhance the knowledge on the Transfer Pricing policy in international business

CO4: Application of XBRL software in financial reporting.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	3	3	-	-	2	-	2
CO2	3	3	-	1	1	-	-	-	2	3	2	-	-	-	2
CO3	3	2	-	-	-	-	-	-	3	3	-	-	-	-	2
CO4	3	3	-	-	1	-	-	-	2	3	3	-	-	-	2
Weighted Average	**3**	**2.25**	-	**1**	**1**	-	-	-	**2.5**	**3**	**2.5**	-	**2**	-	2

HC 11: STRATEGIC MANAGEMENT

Total Credits:4 **Credit Pattern: 3:1:0** **No of hours:5 per week**

Course Outcome:

CO1: Enlightening the top echelons on the linkages between vision, mission and strategies

CO2: Develop strategies keeping core competencies acquired over the years

CO3: Develop competitive building blocks and design approaches to increase Competitive advantage

CO4: Enlighten all stake holders on the linkages between strategy formulation, implementation and evaluation

CO5: Identify endogenous and exogenous forces influencing strategic decision making

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	2	-	2	-	-	2	1
CO2	3	3	-	1	1	-	-	-	3	1	3	-	-	3	3
CO3	3	2	-	-	-	-	-	-	2	-	2	-	-	2	3
CO4	3	3	-	-	1	-	-	-	3	1	3	-	-	3	3
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**-**	**-**	**-**	**2.25**	**1**	**2.25**	**-**	**-**	**2.25**	**2.25**

SC 17: FOREIGN EXCHANGE MANAGEMENT

Total Credits: 4 **Credit Pattern: 3:1:0** **No of hours: 5 per week**

Course Outcomes

CO-1: Acquisition of conceptual knowledge on international monetary system

CO-2: Overview on FOREX management and FOREX reserve

CO-3: Application of hedging against foreign exchange exposure

CO-4: Forecasting foreign exchange rates using various techniques.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	-	2	1	-	-	-	2
CO2	3	2	-	1	1	-	-	-	-	2	2	-	-	-	2
CO3	3	2	-	-	-	-	-	-	-	2	3	-	-	-	2
CO4	3	3	-	-	1	-	-	-	-	3	3	-	-	-	3
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**-**	**-**	**-**	**-**	**2.25**	**2.25**	**-**	**-**	**-**	**2.25**

SC 19 - ELECTIVE GROUP A: BUSINESS TAXATION

PAPER 2: CORPORATE TAX LAW AND PLANNING

TotalCredits:4 Credit Pattern: 3:1:0 No of hours:5 per week

3. Course Outcomes

CO-1: Knowing overview of corporate tax system in India

CO-2: Exposure on practical approaches towards taxable income of the company

CO-3: Application of Income tax rules in managerial decisions such as, make or buy, dividend decisions, etc.

CO-4: Online filing of returns for corporate assesse

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	1	-	-	-	1	-	-	3	-	3	-	1	-	1
CO2	3	3	-	1	1	3	-	-	3	1	3	-	3	-	3
CO3	3	2	-	-	-	2	-	-	3	1	3	-	2	-	2
CO4	3	3	-	-	1	3	-	-	3	1	3	-	3	-	3
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**2.25**	**-**	**-**	**3**	**1**	**3**	**-**	**2.25**	**-**	**2.25**

SC 20: ELECTIVE GROUP B – FINANCIAL ACCOUNTING

PAPER 2: CONTEMPORARY AREAS OF FINANCIAL ACCOUNTING

Total Credits: 4 per week **Credit Pattern: 3:1:0** **No of hours: 5**

Course Outcomes:

C01- Provide Detailed insight of Human resource Accounting.

C02 -Understand concept of Accounting for Bonus shares, right shares and dividend.

C03-Application of different methods of Inflation accounting.

C04-Understand the concept of environmental accounting.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	-	-	-	3	2	-	-	-	-	2
CO2	3	3	-	1	1	-	-	-	3	3	-	1	1	-	2
CO3	3	2	-	-	-	-	-	-	3	2	-	-	-	-	2
CO4	3	3	-	-	1	-	-	-	3	3	-	-	1	-	2
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**-**	**-**	**-**	**3**	**2.25**	**-**	**1**	**1**	**-**	**2**

SC 21 -ELECTIVE GROUP C: FINANCIAL MANAGEMENT

PAPER 2: FINANCIAL DERIVATIVES

TotalCredits:4 **Credit Pattern: 3:1:0** **No of hours:5**

Course Outcomes:

CO1 Understand the various financial derivative instruments such as options, futures, swaps and other derivative securities.

CO2 Application of derivative instruments in managing the risk of investing and hedging activity at the individual and the corporate level.

CO3 Comprehend the economic environment in which derivative instruments operate.

CO4 Employ theoretical valuation methods to pricing of financial derivative instruments by using different valuation models

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	1	-	-	-	3	-	3	1	-	1	-	-	-	1
CO2	3	3	-	1	1	3	-	3	3	-	3	-	-	-	3
CO3	3	2	-	-	-	3	-	3	2	-	3	-	-	-	2
CO4	3	3	-	-	1	3	-	3	3	-	3	-	-	-	3
Weighted Average	**3**	**2.25**	**-**	**1**	**1**	**3**	**-**	**3**	**2.25**	**-**	**2.5**	**-**	**-**	**-**	**2.25**

SC 22 -ELECTIVE GROUP D: HUMAN RESOURCE MANAGEMENT

PAPER 2: INDUSTRIAL RELATIONS & COLLECTIVE BARGAINING

Total Credits: 4 Credit Pattern: 3:1:0 No of hours:5 per week

Course Outcomes:

C01- To help students acquire solid theoretical, practical and ethical perspective on various¬ aspects of IR.

C02-To make the student aware of the present state of IR in India.

C03-To Understand the various processes and procedures of handling Employee Relations.

C04-To be acquainted with the concepts, principles and issues connected with Trade Unions,¬ Collective Bargaining and Grievance redressal

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	1	-	-	-	-	-	-	3	3	-	1	1	1	3
CO2	3	3	-	1	1	-	-	-	2	3	-	3	3	3	2
CO3	3	2	-	-	-	-	-	-	2	3	-	2	2	2	2
CO4	3	3	-	-	1	-	-	-	3	3	-	3	3	3	3
Weighted Average	**3**	**2.25**	-	**1**	**1**	-	-	-	**2.5**	**3**	-	**2.25**	**2.25**	**2.25**	**2.5**

SC23 - ELECTIVE GROUP E: MANAGEMENT ACCOUNTING

PAPER 2: COST MANAGEMENT

Total Credits:4 Credit Pattern: 3:1:0 No of hours:5 per week

Course Outcomes

At the end of the course, the students will be able to know:

CO-1: Application of tools and techniques in activity-based cost for managerial decision

CO-2: Practical approaches on cost volume profit analysis

CO-3; Theoretical and practical approaches on various Pricing strategies

CO-4: Application of operation research and statistical tools in cost management.

Course Articulation Matrix

CO\PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15
CO1	3	2	-	-	-	2	-	-	2	3	2	-	-	-	2
CO2	3	3	-	1	1	2	-	-	2	3	2	-	-	-	3
CO3	3	2	-	-	-	3	-	-	3	3	3	-	-	-	2
CO4	3	3	-	-	1	2	-	-	2	3	2	-	-	-	3
Weighted Average	**3**	**2.25**	-	**1**	**1**	**2.25**	-	-	**2.25**	**3**	**2.25**	-	-	-	**2.25**

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Department of Business Administration

Master of Business Administration

Program Outcomes:

PO1: Apply knowledge of Business Management and Management specialization.

PO2: Identify, formulate research literature, and analyze business Management problems.

PO3: Design solutions for complex business management problems that meet specified needs with appropriate considerations for profits- people- planet.

PO4: Conduct investigations of complex business management problems using research band knowledge, analysis of secondary data, and interpretation of the same.

PO5: Create, select, and apply appropriate techniques, resources, and IT tools, includingmodeling and solution generation.

PO6: Apply reasoning informed by contextual knowledge to areas of social, health, safety, legal, and cultural issues

PO7: Understand and evaluate the sustainability and impact of business management work in the solution in societal and sustainability contexts.

PO8: Apply ethical principles and commit to professional ethics and norms of business management practice.

PO9: Function effectively as an individual and as a member or leader in diverse teams and multi-specialization teams

PO10: Able to comprehend and write effective reports and make effective presentations, including documentation and retrieval

PO11: Demonstrate business management knowledge and understanding of business management principles.

PO12: Recognize the need for and have the preparation and ability to engage in independent and lifelong learning.

I Semester

Hardcore: Management Theory & Practices **Course code:23C101**

Course Outcome:

CO1: Acquire the conceptual knowledge of Management and various functions of Management.

CO2: Apply managerial knowledge in real-world situations.

CO3: Develop a greater understanding of Management.

CO4: Demonstrate their exposure to recent trends in management.

CO5: Ability to understand the management process in the corporate world.

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO1 0**	**PO1 1**	**PO1 2**
CO1	2	2	-	-	2	2	2	-	3	2	3	-
CO2	3	2	2	3	2	1	-	1	3	-	3	-
CO3	3	2	2	1	2	1	1	2	3	2	3	-
CO4	2	-	2	-	3	2	-	-	3	2	3	3
CO5	2	-	3	2	3	2	-	-	3	2	3	2
W. A	**2.4**	**2**	**2.25**	**2**	**2.4**	**1.6**	**1.5**	**1.5**	**3**	**2**	**3**	**2.5**

Hardcore: Organizational Behaviour **Course code:23C102**

Course Outcome:

CO1: Analyse the behaviour of individuals in the organization.

CO2: Critically examine the potential effects of behavioral issues on the organization.

CO3: Distinguish between Teams and Groups and devise methods to enhance their functioning.

CO4: Identify and develop techniques to motivate individuals.

CO5: Assess Leadership qualities and abilities required to sustain.

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO 11**	**PO 12**
CO1	2	3	3	1	3	3	2	-	3	-	1	3
CO2	2	3	3	3	2	3	3	1	3	-	3	3
CO3	3	3	3	3	3	2	2	1	3	1	2	1
CO4	3	3	3	3	3	2	1	2	3	3	1	2
CO5	3	1	3	3	3	3	3	1	3	1	2	3
W. A	**2.6**	**2.6**	**3**	**2.6**	**2.8**	**2.6**	**2.2**	**1**	**3**	**1**	**1.8**	**2.4**

Hardcore: Managerial Economics **Course code:23C103**

Course Outcome:

CO1: Develop the fundamental concepts of microeconomics used to facilitate the problem of scarcity and resource allocation in the context of choices and opportunity cost.

CO2: Examine the factors determining the Demand and Supply, elasticities.

CO3: Deduce the cost, revenue, and production functions for business implications.
CO4: Assess the different market conditions, the intensity of competition, and conditions for equilibrium in different types of markets.

CO5: Develop the fundamental concepts of macroeconomics to facilitate Business Strategies.

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO12**
CO1	3	2	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	2	1	2	2	2	3	3	2	2	2
CO4	3	2	3	3	2	3	3	2	2	2	3	3
CO5	2	2	1	2	2	3	2	1	2	1	2	2
W. A	**2.8**	**2.2**	**2.4**	**2.4**	**2.4**	**2.8**	**2.6**	**2.4**	**2.8**	**2.2**	**2.6**	**2.6**

Hardcore: Accounting for Managers **Coursecode:23C104**

Course Outcome:

CO1: Demonstrate the applicability of the accounting principles to prepare the accounting to understand the managerial decisions

CO2: Demonstrate the applicability of the depreciation concept to prepare reports and make managerial decisions.

CO3: Prepare the final account reports with the accounting tools and concepts and facilitate managerial decisions.

CO4: Apply the financial statement analysis associated with financial data in the organization.

CO5: Application of latest development trends & practices in accounting Concepts.

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

Hardcore: Business Communication **Course code:23C105**

Course Outcome:

CO1: Remember the basics of written and oral communication

CO2: Appraise the communication situations and forms

CO3: Exhibit understanding by analyzing any given business situations

CO4: Apply negotiation strategies, demonstrate the usage of communication networks, and adopt employment communication for career growth.

CO5: Prepare business letters, and reports and adopt case methods of learning.

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

Hardcore: Business Statistics **Course code:23C106**

Course Outcome:

CO1: Enable to understand and apply statistics concepts and execute decisions.

CO2: Enable to remember the concept and statistics formula to use it appropriately.

CO3: Enable to apply the statistics tools and techniques to draw valid conclusions and to make appropriate decisions

CO4: Students will be able to analyze alternate solutions obtained by using Quantitative Techniques and justify their selection of decision.

CO5: Critically evaluate the results and make a management decision

COURSE ARTICULATION

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

Softcore: Computer Application in Management **Course code:23C107**

Course Outcome:

CO1: Recognize when to use each of the Microsoft Office programs tocreate professional and academic documents.

CO2: Perform basic analysis using word processing, spreadsheet, and PowerPoint and create professional and academic documents.

CO3: Use Microsoft Office programs to create personal, academic, and business documents following current professional and/or industry standards.

CO4: Apply computer skills and concepts for basic use to create personal, academicand business documents in the workplace.

CO5: To equip students with presentation skills through the use of Microsoft Office Programs.

Course Articulation Matrix

Hardcore: Skill Development – 1 **Course code:23C108**

Course Outcome:

CO1: The student will develop a high level of proficiency in the targeted skill, showcasing the ability to perform tasks and solve problems related.

CO2: The student will be able to communicate ideas, strategies, and solutions related to the skill clearly and effectively

CO3: The student will be able to decide the appropriate mediums such as written reports, oral presentations, or visual aids.

CO4: The student will be able to develop a high level of proficiency in writing emails. CO5: The student will be able to understand underlying principles and how they relate to practical applications.

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

SEMESTER II

Hardcore: Marketing Management **Course code: 23C201**

Course Outcome:

CO1: At the end of this course, the students will be able to formulate marketing strategies that incorporate psychological and sociological factors that influence buying.

CO2: Understand branding; identify marketing channels and product distribution through various sales promotion techniques.

CO3: Identify, define, and analyze the marketing problems

CO4: Able to analyze the product pricing, branding, and marketing strategies at various levels of PLC.

CO5: Able to frame proper marketing and communication mix strategies for the target group.

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	2	2	1	3	3	2	2	2	3	2	3	2
CO2	3	3	2	3	3	2	2	2	2	2	3	3
CO3	3	3	3	3	3	2	2	3	3	3	3	3
CO4	3	3	3	3	3	3	2	3	2	3	2	3
CO5	3	3	3	3	3	2	3	3	2	3	3	3
W. A	**2.8**	**2.8**	**2.4**	**3**	**3**	**2.2**	**2.2**	**2.6**	**2.4**	**2.6**	**2.8**	**2.8**

Hardcore: Human Resource Management **Course code: 23C202**

Course Outcome:

CO1: Ability to plan human resources and develop competency in job analysis.

CO2: Competency to recruit and select employees.

CO3: Competency to train people and evaluate training.

CO4: Ability to design appraisal performance systems and appraise employees' performance.

CO5: Design of compensation and salary administration.

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	-	-	3	3	3	-	1	2	3	2	2
CO2	3	-	2	2	2	2	-	3	3	2	2	-
CO3	3	-	3	-	3	2	-	2	3	3	3	3
CO4	3	2	3	3	3	2	-	3	3	3	2	-
CO5	3	3	3	2	-	3	-	2	3	-	2	-
W. A	**3**	**2.5**	**2.75**	**2.5**	**2.75**	**2.4**	**-**	**2.2**	**2.8**	**2.75**	**2.2**	**2.5**

Hardcore: Corporate Finance **Course code: 23C203**

Course Outcome:

CO1: Students will define concepts and classify – interpret summarize concepts in Finance.

CO2: Students will be able to apply financial concepts in sourcing and investment decisions.

CO3: Students will be able to analyze, and compare to make appropriate decisions.

CO4: Students will be able to critically evaluate financial decisions and justify financial decision.

CO5: Students will be able to plan and design capital structures, investment decisions.

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

Hardcore: Business Research Methods **Course code: 23C204**

Course Outcome:

CO1: To develop an understanding of the basic framework of the research process in business decision-making.

CO 2: To develop an insight into various research designs and techniques.

CO 3: To understand some basic concepts of research and its methodologies

CO 4: Devise tools and methods for data collection using Sampling techniques.

CO 5: To be able to write research reports and be thesis-independent.

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	2	2	3	3	2	2	2	-	-	2	2	1
CO2	-	3	3	3	2	1	2	-	-	1	-	1
CO3	-	3	3	3	3	1	2	-	-	1	-	1
CO4	-	3	3	3	3	1	2	-	-	1	-	1
CO5	-	3	3	3	3	1	2	-	-	3	1	1
W. A	**2.0**	**2.8**	**3.0**	**3.0**	**2.6**	**1.2**	**2**	**-**	**-**	**1.6**	**0.6**	**1.0**

Hardcore: Operations Management **Course code: 23C205**

Course Outcome:

CO1: Provide an outline of the concepts, principles, and theories related to Production and Operations management

CO2: Understand the importance of Production and operations Planning, Process and Design.

CO3: Evaluate the Demand Forecast Through Various Forecasting Techniques.

CO4: Evaluate the various approaches and strategies for Business Locations, Layout Designs

CO5: Evaluate the Inventory Management Process through various models.

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO1 1**	**PO 12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

Hardcore: Legal Aspects of Business Course code: 23C206

Course Outcome:

CO1: Analyse various laws about business organizations.

CO2: Distinguish between various foreign exchange transactions required bybusiness organizations.

CO3: Recognize and identify the rights and responsibilitiesof consumers.

CO4: Explain the rights of the creator through IPR.

CO5: Review the provisions for different kinds of companies.

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

Hardcore: Business Analytics **Course code: 23C207**

Course Outcome:

CO1: Understand the Scope and Importance of Business Analytics through the various approaches to Business Decision Making.

CO2: Analyse the application of business analysis in different domains.

CO3: Use measures of dispersion, compute and interpret the results of Correlation and Regression Analysis in business forecasting and decisions.

CO4: Demonstrate the use of decision theory to handle uncertain business situations.

CO5: Find optimal solutions by various data analytics techniques.

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	3	-	-	-	-	-	-	3	-	-	-
CO2	-	3	-	-	-	-	-	-	-	3	-	-
CO3	-	-	-	2	-	2	-	-	-	-	-	-
CO4	-	-	-	2	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	3	-	-	-	-	-	-
W. A	**3**	**3**	**-**	**2**	**-**	**2.5**	**-**	**-**	**3**	**3**	**-**	**-**

Hardcore: Management Information System **Course code: 23C208**

Course Outcome:

CO1: Ability to make informed decisions using information systems.

CO2: Develop knowledge about system development and usage of web portals.

CO3: Develop technical skills in using functional modules in business.

CO4: Develop skills to apply technology in business- and business-related decision-making.

CO5: Develop skills to apply ERP skills in Business management.

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

Hardcore: Skill Development - 2 Course code: 23C209Course Outcome:

CO1: The student will develop a high level of proficiency in setting goals to become successful managers.

CO2: The student will be able to perform tasks and solve problems related.

CO3: The student will learn to work in teams and become a team member.

CO4: The student will be able to improve on body language and related skills fit for managers.

CO5: The student will be able to understand Grooming and other Etiquette required in professional life.

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

SEMESTER III

Hard Core: Strategic Management **Course code: 23C301**

Course Learning Outcomes

CO1. Understand strategy as a process of envisioning and planning to create SCA and achieve above-average returns

CO2. Demonstrate the knowledge in formulating strategies to gain SCA

CO3. Analyze the competitive environment of business

CO4. Evaluate challenges and opportunities faced by managers in pursuing growth strategies

CO5. Select suitable strategic approaches to build and implement

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

Hard Core: Entrepreneurship **Course code: 23C302**

Course Learning Outcome

CO1: Comprehend and understand the fundamentals of Entrepreneurship

CO2: Competence to develop a business plan

CO3: Understand the Rural & Social Entrepreneurial Classification

CO4: Analyze and evaluate the Critical Challenges of Entrepreneurship

CO5: Inculcate Entrepreneurial Perspectives, and, Entrepreneurial Growth.

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

ELECTIVE COURSE GROUP 1 MARKETING

ELECTIVE COURSE: Consumer Behaviour Course code:23C3M1

Course Learning Outcomes

CO1: Explore and compare the core theories of consumer behavior in both consumer and organizational markets

CO2: Appraise models of Consumer Behavior and determine their relevance to particular marketing situations

CO3: Analyze and demonstrate theories to real- world marketing situations by profiling and identifying marketing segments

CO4: Apply and enhance abilities to input this knowledge in the marketing planning process, particularly in market segmentation, positioning, and marketing mix development

CO5: Critique the theoretical perspectives associated with consumer decision-making, including recognizing cognitive biases and heuristics

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

ELECTIVE COURSE: Digital Marketing Course code:23C3M2

Course Learning Outcomes

CO 1: Outline the basics of digital marketing and digital marketing plan.

CO 2: Utilize the concepts of display ads and e-mail marketing in digital campaigns.

CO 3: Choose the appropriate social media for achieving the objectives of the campaign.

CO 4: Appraise the SEO and SEM efforts of any business organization.

CO 5: Explain Mobile Marketing and Web Analytics about any business.

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

Elective Course: Advertising, Sales & Promotion ManagementCourse code: 23C3M3

Course Learning Outcomes:

CO1: Able to choose optimal advertisement media through a proper agency;

CO2: Able to ensure ethics and standards of advertising.

CO3: Distinguish different situations in the competitive environment that affect choices in target marketing

CO4: Able to communicate marketing information persuasively and accurately in oral, written, and graphic formats

CO5: Contribute to evaluating the effectiveness of advertising and marketing communications initiatives

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	3	3	2	3	2	3	2	3	2
CO2	2	3	2	2	3	2	2	2	2	2	3	3
CO3	3	3	3	2	2	3	3	3	3	2	2	2
CO4	2	3	3	3	2	2	3	3	2	3	2	3
CO5	3	3	3	2	2	3	3	3	2	3	2	2
W. A	2.6	2.8	2.8	2.4	2.4	2.4	2.8	2.6	2.4	2.4	2.4	2.4

ELECTIVE COURSE GROUP 2 – FINANCE

ELECTIVE COURSE: Advance Financial Management Course code: 23C3F1

Course Learning Outcome

CO1. Recognize the importance of financial management from a strategic perspective

CO2. Apply the methods and procedures of financial management, with particular reference to long-term and short-term financing decision

CO3. Compare various models of investment decision-making under uncertainty

CO4. To understand and analyze the role of financial models and forecast company's funding needs

CO5. To analyze the financial implications of various business strategies and the strategic management of finance

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

Elective Course: Banking, Financial Services and Insurance Course code: 23C3F2

Course Learning Outcome

CO1: Students will be able to describe banking and central banking functions

CO2: Students will be able to explain, interpret- summarize, and classify the banking activities

CO3: Students will be able to apply the regulatory framework to banking and insurance

CO4: Students will be able to analyze the types and applications of insurance, financial services, and financial performance

CO5: Students will be able to critically evaluate the developments in financial markets and various products

Course Articulation Matrix

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

ELECTIVE COURSE: Investment Analysis & Portfolio ManagementCourse code: 23C3F3

Course Learning Outcome

CO 1. The students will understand the various Instruments and alternatives for investment.

CO 2. The students will be able to assess the risk and return associated with investments.

CO 3. The students will be able to analyze the Economy, Industry, and Company framework for Investment Management.

CO 4. The students will learn the theories of Portfolio management and also the tools and techniques for efficient portfolio management.

CO 5. The students will learn portfolio construction and performance evaluation.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	1.6	2.6	1.8	2.2	1.8	2	1.8	1.6	2.6	2.8	2
CO2	3	1.6	2.6	1.8	2.2	1.8	2	1.8	1.6	2.6	2.8	2
CO3	3	1.6	2.6	1.8	2.2	1.8	2	1.8	1.6	2.6	2.8	2
CO4	3	1.6	2.6	1.8	2.2	1.8	2	1.8	1.6	2.6	2.8	2
CO5	3	1.6	2.6	1.8	2.2	1.8	2	1.8	1.6	2.6	2.8	2
W. A	**3**	**1.6**	**2.6**	**1.8**	**2.2**	**1.8**	**2**	**1.8**	**1.6**	**2.6**	**2.8**	**2**

ELECTIVE COURSE

GROUP 3: HUMAN RESOURCE MANAGEMENT

ELECTIVE COURSE: Personal Growth & Interpersonal Effectiveness
Course code: 23C3H1

COURSE LEARNING OUTCOME

CO1. Ability to set short-term and long-term goals.

CO2. Ability to distinguish between cultures, change attitudes of people, anddevelop knowledge on improving job satisfaction of employees.

CO3. Develop learning skills and skills related to positive reinforcement.

CO4. Ability to identify an individual 's personality type favorable or unfavorable to work performance.

CO5. Ability to identify sources and causes of conflicts and stress and develop conflict resolution and coping strategies

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	1.6	2.6	1.8	2.2	1.8	2	1.8	1.6	2.6	2.8	2
CO2	3	1.6	2.6	1.8	2.2	1.8	2	1.8	1.6	2.6	2.8	2
CO3	3	1.6	2.6	1.8	2.2	1.8	2	1.8	1.6	2.6	2.8	2
CO4	3	1.6	2.6	1.8	2.2	1.8	2	1.8	1.6	2.6	2.8	2
CO5	3	1.6	2.6	1.8	2.2	1.8	2	1.8	1.6	2.6	2.8	2
W. A	**3**	**1.6**	**2.6**	**1.8**	**2.2**	**1.8**	**2**	**1.8**	**1.6**	**2.6**	**2.8**	**2**

ELECTIVE COURSE: Organizational Change & Development
Course code: 23C3H2

Course Learning Outcomes

CO1: Develop the knowledge of planning for organizational change and apply appropriate strategies for implementing planned change.

CO2: Ability to identify the sources of resistance to change and overcome resistance to change.

CO3: Ability to apply theories of change management in the work environment.

CO4: Application of appropriate OD intervention for organizational change and development.

CO5: Build a perspective organizational design including recent Advancement and link them with various relevant theoretical streams.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

ELECTIVE COURSE: Training & Development **Course code: 23C3H3**

Course Learning Outcome

CO 1. Assess the importance of training in organizations.

CO 2. Compute training needs analysis for organizations.

CO 3. Compare and contrast different training methods.

CO 4. Identify the skills required for the trainer.

CO 5. Evaluate the effectiveness of training programs through various models and theories.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	3	3	2	3	3	2	2	2	2	3	3
CO2	3	3	3	3	2	2	2	3	3	1	3	3
CO3	3	3	3	3	3	2	2	3	3	1	3	2
CO4	2	3	2	2	2	3	3	1	3	2	3	3
CO5	3	3	3	3	2	2	2	3	3	3	1	2
W. A	**2.8**	**3**	**2.8**	**2.6**	**2.4**	**2.4**	**2.2**	**2.4**	**2.8**	**1.8**	**2.6**	**2.6**

ELECTIVE COURSE GROUP 4 CORPORATE SOCIAL RESPONSIBILITY

ELECTIVE COURSE: Fundamentals of CSR **Course code: 23C3C1**

Course Learning Outcome

CO1: To learn the concepts and theories of CSR

CO2: To know the importance of sustainable development goals

CO3: To understand the role of NGOs in promoting and implementing CSR initiatives in India

CO4: To evaluate futuristic role of CSR in India

CO5: To comprehend the role of non-profit & Local Self- Governance in implementingCSR

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	2	3
CO5	3	2	3	3	3	3	3	3	3	3	2	3
W. A	**3**	**2.4**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**2.6**	**3**

ELECTIVE COURSE: Social Developing Issues & Challenges

Course code: 23C3C2

Course Learning Outcome:

CO1: The students will be enlightened on the principles and practices of

CO2: NGOs, Cooperatives and Corporate foundations

CO3: Comprehend contemporary social issues and equate social work intervention

CO4: Understand Social legislations and rights of the marginalized

CO5: Cognize MDG, SDG and Government of India policies for social security

CO6: Recognize the need for corporate community collaboration

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	2
CO5	3	2	3	3	3	3	3	3	3	3	3	2
W. A	**3**	**2.4**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**2.6**

ELECTIVE COURSE: Corporate Governance & Ethics
Course code: 23C3C3

Course Learning Outcome:

CO1: The students should be able to appreciate the nature of businessethics, ethical leadership

CO2: The students must comprehend theoretical aspects of corporate governance

CO3: Comprehend corporate ethics in different dimensions

CO4: Understand different committees in Indian organizations

CO5: Categorize Accounting standards and Non-Accounting Regulations in Corporate Governance

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	3	2	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	2
CO5	3	2	3	3	3	3	3	3	3	3	3	2
W. A	**3**	**2.4**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**2.6**

ELECTIVE COURSE GROUP 5 TOURISM & TRAVEL MANAGEMENT

ELECTIVE COURSE: Tourism Management Course Code: 23C3T1

Course Outcomes

To acquire the conceptual clarity of tourism.

To enhance the knowledge related to impacts on tourism.

To acquire the background knowledge of types, typologies of tourism.To acquire the concepts, relate to economics of tourism.

To acquire the knowledge of international, national and regional organizationsof tourism.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO4**	**PO 5**	**PO6**	**PO7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	2	1	-	-	2	3	2	1	1	1	-	-
CO2	2	2	1	2	3	1	3	1	1	2	1	1
CO3	2	2	1	3	-	1	1	2	3	1	3	1
CO4	2	1	2	3	1	-	-	2	1	1	3	1
CO5	2	1	2	3	-	2	3	1	2	1	2	-
W. A	**2**	**1.4**	**1.5**	**2.75**	**2**	**1.75**	**2.25**	**1.4**	**1.6**	**1.2**	**2.25**	**1**

ELECTIVE COURSE: Global Tourism Geography

Course Code:23C3T2

Course Outcomes:

CO1: To acquaint with the interdependence between geography and tourism;

CO2: To familiarize on the locales, attractions, and accessibility to major tourist destinations across the American continents.

CO3: To familiarize on the locales, attractions, and accessibility to major tourist destinations across the European continents.

CO4: To familiarize on the locales, attractions, and accessibility to major tourist destinations across the African continents.

CO5: To be able to plan tour itineraries of various countries across time zones.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	2	1	2	-	3	1	2	1	3	1	3	1
CO2	2	2	3	1	3	2	1	-	3	1	2	-
CO3	2	1	1	2	1	1	2	1	1	2	1	-
CO4	2	1	1	1	1	1	1	1	1	-	-	-
CO5	2	1-	3	2	2	-	-	2	1	-	2	3
W. A	**2**	**1.25**	**2**	**1.5**	**2**	**1.25**	**1.5**	**1.25**	**1.8**	**1.33**	**2**	**2**

ELECTIVE COURSE: Hotel Operation & Management

Course Code: 23C3T3

Course Outcomes:

To acquire the concepts and functions of hotel and hospitality operations and management

To familiarize with front office operations.

To familiarize with accommodation management.

To familiarize with food & beverage management.

To enhance the knowledge related to evaluating hotel performance andrevenue management

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/ PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	2	1	1	1	-	1	1	1	1	1	3	3
CO2	2	-	-	1	1	2	1	-	2	1	2	3
CO3	2	2	1	-	-	1	-	-	1	-	1	3
CO4	2	1	-	1	1	1	1	-	1	1	-	3
CO5	2	-	-	-	-	-	-	-	-	-	-	3
W. A	**2**	**1.33**	**1**	**1**	**1**	**1.25**	**1**	**1**	**1.25**	**1**	**2**	**3**

ELECTIVE COURSE: Tourism Management

Course Code: 23C3T1

Course Outcomes

CO1: To acquire the conceptual clarity of tourism.

CO2: To enhance the knowledge related to impacts on tourism.

CO3: To acquire the background knowledge of types, typologies of tourism.

CO4: To acquire the concepts, relate to economics of tourism.

CO5: To acquire the knowledge of international, national and regional organizations of tourism.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO 12**
CO1	2	1	-	-	2	3	2	1	1	1	-	-
CO2	2	2	1	2	3	1	3	1	1	2	1	1
CO3	2	2	1	3	-	1	1	2	3	1	3	1
CO4	2	1	2	3	1	-	-	2	1	1	3	1
CO5	2	1	2	3	-	2	3	1	2	1	2	-
W. A	**2**	**1.4**	**1.5**	**2.75**	**2**	**1.75**	**2.25**	**1.4**	**1.6**	**1.2**	**2.25**	**1**

ELECTIVE COURSE: Global Tourism Geography Course Code: 23C3T2

Course Outcomes:

CO1: To acquaint with the interdependence between geography and tourism;

CO2: To familiarize on the locales, attractions, and accessibility to major tourist destinations across the American continents.

CO3: To familiarize on the locales, attractions, and accessibility to majortourist destinations across the European continents.

CO4: To familiarize on the locales, attractions, and accessibility to major tourist destinations across the African continents.

CO5: To be able to plan tour itineraries of various countries across time zones.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	1	2	-	3	1	2	1	3	1	3	1
CO2	2	2	3	1	3	2	1	-	3	1	2	-
CO3	2	1	1	2	1	1	2	1	1	2	1	-
CO4	2	1	1	1	1	1	1	1	1	-	-	-
CO5	2	1-	3	2	2	-	-	2	1	-	2	3
W. A	**2**	**1.25**	**2**	**1.5**	**2**	**1.25**	**1.5**	**1.25**	**1.8**	**1.33**	**2**	**2**

ELECTIVE COURSE: Hotel Operation & Management
Course Code: 23C3T3

Course Outcomes:

CO1: To acquire the concepts and functions of hotel and hospitality operations and management

CO2: To familiarize with front office operations.

CO3: To familiarize with accommodation management.

CO4: To familiarize with food & beverage management.

CO5: To enhance the knowledge related to evaluating hotel performance and revenue management

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/ PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	1	1	1	-	1	1	1	1	1	3	3
CO2	2	-	-	1	1	2	1	-	2	1	2	3
CO3	2	2	1	-	-	1	-	-	1	-	1	3
CO4	2	1	-	1	1	1	1	-	1	1	-	3
CO5	2	-	-	-	-	-	-	-	-	-	-	3
W. A	**2**	**1.33**	**1**	**1**	**1**	**1.25**	**1**	**1**	**1.25**	**1**	**2**	**3**

SEMESTER IV

Hard Core: Project Appraisal & Management

Course code:3C401

COURSE LEARNING OUTCOME

CO1. Identify different concepts, contemporary methods, and systems for project management and appraisal.

CO2. Understand specialized evaluation techniques to determine and evaluate project feasibility.

CO3. Apply, synthesize, and communicate the financial context of projects and compare alternative projects.

CO4. Critically analyses risk parameters to decide the selection of projects.

CO5. To acquire knowledge and competencies to successfully implement the project

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	2	3	3	2	2	2	2	3	3
CO2	3	3	3	3	2	2	2	3	3	1	3	3
CO3	3	3	3	3	3	2	2	3	3	1	3	2
CO4	2	3	2	2	2	3	3	1	3	2	3	3
CO5	3	3	3	3	2	2	2	3	3	3	1	2
W. A	**2.8**	**3**	**2.8**	**2.6**	**2.4**	**2.4**	**2.2**	**2.4**	**2.8**	**1.8**	**2.6**	**2.6**

Hard Core: Capstone Project Report

Course Code: 23C406

COURSE OUTCOME

CO1: Improve student's research and personal skills

CO2: Upgrade student's experience of practical work thereby enhancing professional growth and experience

CO3: Creating valuable employees and competent job applicants for the companies

ELECTIVE COURSE GROUP

6 MARKETING

ELECTIVE COURSE: Brand Management

Course Code:23C4M4

Course Outcomes:

CO1. Enable the students to develop the critical importance of raising awareness of a product by Branding and understanding various dimensions ofthe Gamut of Branding.

CO2. Develop the vital role of understanding product launching strategies and how they play an important part in the survival and thriving of business.

CO 3. Helping the student realize the growing importance of strategic approaches in planning, executing, and evaluating marketing strategies using Branding.

CO 4. Assisting the students comprehend a holistic ability to develop tenable programs to make a brand robust and seamlessly help protect and promote a product and its business.

CO 5. To enable the student to appreciate the need for practicing values, principles, and ethics in Business and to be able to acknowledge, appreciate, andapply Brands to project a strong sense of association.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	2	3	3	2	2	2	2	3	3
CO2	3	3	3	3	2	2	2	3	3	1	3	3
CO3	3	3	3	3	3	2	2	3	3	1	3	2
CO4	2	3	2	2	2	3	3	1	3	2	3	3
CO5	3	3	3	3	2	2	2	3	3	3	1	2
W. A	**2.8**	**3**	**2.8**	**2.6**	**2.4**	**2.4**	**2.2**	**2.4**	**2.8**	**1.8**	**2.6**	**2.6**

ELECTIVE COURSE: Industrial Marketing

Course Code:23C4M5

COURSE LEARNING OUTCOME

CO1. Students will know key concepts, theories, and models required to understand the unique phenomena that emerge in managing business-to-business marketing.

CO2. Students will be able to identify, categorize, and analyze the various components of the Business marketing-related issues required in managing market relationships.

CO3. Students will be able to appreciate a given market situation and apply relevant concepts and tools that increase efficiency and effectiveness.

CO4. Students will be able to evaluate a given service situation, develop strategies, and develop interventions required to address key issues in markets. **CO5.** Build upon important workplace skills through active learning activitiesand other classroom exercises.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

ELECTIVE COURSE: Services Marketing

Course Code:23C4M6

COURSE LEARNING OUTCOME

CO1: At the end of this course the students will be able to analyses and evaluate consumer behavior in the services sector;

CO2: Ensuring customer service delivery through various channels; and ableto promote services across various service sectors.

CO3: Provide analytical skills to recognize the service as a strategy that supports broader marketing decisions.

CO4: Evaluate the capacity and demand management in service marketing.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

ELECTIVE COURSE: International Marketing

Course Code: 23C4M7

COURSE OUTCOME

CO1. Develop an understanding of and an appreciation for basic international marketing concepts, theories, principles, and terminologies.

CO2. Be able to demonstrate an awareness and knowledge of the impact of environmental factors (cultural, economic, institutional, legal, and political) on international marketing activities.

CO3. Be capable of identifying international customers through conducting marketing research and developing cross-border segmentation and positioning strategies by applying product pricing promotion and channels of distribution in international settings.

CO4. Be capable of appreciating various schemes, initiatives, and policies of the government of India to promote exports on a sustained basis and to optimizethe utilization of detailed resources.

CO 5. Exposing the student to various international economic institutions and forums to promote international trade and appreciating the dimensions of global aspects of trade, commerce, and international relations.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

ELECTIVE COURSE GROUP 7 FINANCE

ELECTIVE COURSE: Mergers, Acquisition & Corporate Restructuring

Course Code: 23C4F4

COURSE LEARNING OUTCOME

CO1. Understand the mergers, acquisition, and restructuring strategies

CO2. Make an informed decision with due diligence

CO3. Apply Business valuation approaches

CO4. Evaluate purchase consideration in Mergers and Acquisition

CO5. Analyze the Legal and Regulatory aspects of merger and acquisition

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

ELECTIVE COURSE: Derivatives **Course code: 23C4F5**

COURSE LEARNING OUTCOME

CO1. The student will be able to remember the fundamental concepts of derivative instruments.

CO2. The student will be able to understand the concepts of derivatives as a financial risk management tool.

CO3. The student will be able to apply the concepts of derivative instruments to real- life situations and compute the fair value of derivative instruments.

CO4. The student will be able to analyze the situation and adopt the appropriate strategy of speculation, arbitrage, or hedging based on the situation.

CO5. The student will be able to evaluate the results of various strategies adopted based onthe situation. Demonstrate the application of concepts learned to practical situations involving several cases of cost control and management.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

ELECTIVE COURSE: International Finance

Course code:23C4F6

COURSE LEARNING OUTCOME

CO 1. Analyze the international integration of financial markets.

CO 2. Measure Foreign Exchange Exposure and Hedge Foreign Exchange Exposure.

CO 3. Apply financial knowledge in forecasting foreign exchange rates.

CO 4. Understand strategies used by Multinational Corporations.

CO 5. Evaluate projects using International Capital Budgeting

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO12**
CO1	3	2	3	3	1	2	3	3	3	3	3	3
CO2	3	3	3	3	3	1	2	3	2	3	3	3
CO3	3	3	3	3	3	1	3	2	2	3	3	3
CO4	3	3	3	3	2	1	2	3	3	3	3	3
CO5	3	3	2	2	1	3	3	2	3	3	3	3
W. A	**3**	**2.8**	**2.8**	**2.8**	**2**	**1.6**	**2.6**	**2.6**	**2.6**	**3**	**3**	**3**

ELECTIVE COURSE: Corporate Tax

Course code:23C4F7

COURSE LEARNING OUTCOME

CO 1. The students will understand the different types of companies and their residential status.

CO 2. The students will be able to assess the sources of income and total taxableincome

CO 3. The students will understand corporate tax management regarding advance texts, and TCS.

CO 4. The students will understand various corporate tax planning which willhelp to make better decisions

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	2	1	2	2	2	2	2	2	2	2
CO2	3	2	3	3	3	2	2	3	2	3	3	2
CO3	3	2	3	3	3	2	1	3	2	3	3	2
CO4	3	1	3	1	3	2	2	3	2	2	3	2
CO5	3	1	2	1	1	1	1	3	2	2	3	2
W. A	**3**	**1.6**	**2.6**	**1.8**	**2.4**	**1.8**	**1.6**	**2.8**	**2**	**2.4**	**2.8**	**2**

ELECTIVE COURSE GROUP 8 HUMAN RESOURCE MANAGEMENT

ELECTIVE COURSE: Strategic Human Resource Management

Course code: 23C4H4

COURSE LEARNING OUTCOME

CO 1. Recognize the fundamentals of the SHRM framework andanalyze the overall role of SHRM in business.

CO 2. Compute the strategic planning for Human resources.

CO 3. Design the training program strategically as required for the organization.

CO 4. Design and implement compensation packages for human resources.

CO 5. Gain insights on various operations of HRM at the International level.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	2	1	2	2	2	2	2	2	2	2
CO2	3	2	3	3	3	2	2	3	2	3	3	2
CO3	3	2	3	3	3	2	1	3	2	3	3	2
CO4	3	1	3	1	3	2	2	3	2	2	3	2
CO5	3	1	2	1	1	1	1	3	2	2	3	2
W. A	**3**	**1.6**	**2.6**	**1.8**	**2.4**	**1.8**	**1.6**	**2.8**	**2**	**2.4**	**2.8**	**2**

ELECTIVE COURSE: Industrial Relations & Labour LegislationCourse code: 23C4H5

COURSE LEARNING OUTCOME

CO1: Students are acquainted with the concepts, principles, and issues connected with trade unions.

CO2: Students are acquainted with Collective bargaining and grievance Redressals

CO3: Students Can reflect on Regulative & Protective Legislations.

CO4: Students Can reflect and Summarize Wage Related & SocialSecurity Legislation

CO5: Students Can reflect upon New Labour Codes.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	2	1	2	2	2	2	2	2	2	2
CO2	3	2	3	3	3	2	2	3	2	3	3	2
CO3	3	2	3	3	3	2	1	3	2	3	3	2
CO4	3	1	3	1	3	2	2	3	2	2	3	2
CO5	3	1	2	1	1	1	1	3	2	2	3	2
W. A	**3**	**1.6**	**2.6**	**1.8**	**2.4**	**1.8**	**1.6**	**2.8**	**2**	**2.4**	**2.8**	**2**

ELECTIVE COURSE: International Human Resource Management
Course code: 23C4H6

COURSE LEARNING OUTCOME

CO1: Demonstrate how global HRM functions are different from generic HRM functions in the domestic arena and understand various concepts and practices within the field of global HRM

CO2: Identify the impact of global factors (cultural and contextual factors) in shaping HR practices

CO3: Outline the implications of globalization on people management in multi-national organizations

CO4: Examine the issues and problems faced by MNCs in their people management activities

CO 05: Identify the impact of global factors in shaping compensation, performance appraisal, and management

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	2	3	1	1	2	2	3	2	3	3	2
CO2	3	2	3	3	3	2	2	2	2	3	3	2
CO3	3	2	3	3	3	1	2	1	2	3	2	2
CO4	3	2	3	3	3	2	1	2	2	3	3	2
CO5	3	2	3	3	3	1	1	3	2	3	3	2
W. A	**3**	**2**	**3**	**2.6**	**2.6**	**1.6**	**1.6**	**2.2**	**2**	**3**	**2.8**	**2**

ELECTIVE COURSE: Managing Knowledge Workers Course code: 23C4H7

COURSE LEARNING OUTCOMES

CO1: Recognize the significance of knowledge workers in an organization.

CO2: Gain knowledge on effective harnessing of organizational knowledge.

CO3: Identify the role of a knowledge leader in achieving team goals.

CO4: Realize the association between knowledge management and HRM practices.

CO5: To effectively instill HRM practices in organizational structure tomanage knowledge workers

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	-	3	2	1	-	2	-	-	3	2	2	-
CO2	2	3	2	2	-	2	2	-	3	1	-	1
CO3	3	1	-	-	-	-	-	-	3	-	3	2
CO4	3	2	-	-	-	-	-	-	-	-	2	1
CO5	-	3	2	1	-	2	-	-	3	2	2	-
W. A	1.6	2.4	1.2	0.8	-	1.2	0.4	-	2.4	1	1.8	0.8

ELECTIVE COURSE GROUP 9

CORPORATE SOCIAL RESPONSIBILITY

ELECTIVE COURSE: Brand Management **Course code: 23C4C4**

COURSE LEARNING OUTCOMES:

CO1. Enable the students to develop the critical importance of raising awareness of a product by Branding and understanding various dimensions ofthe Gamut of Branding.

CO2. Develop the vital role of understanding product launching strategies andhow they play an important part in the survival and thriving of business.

CO 3. Helping the student realize the growing importance of strategic approaches in planning, executing, and evaluating marketing strategies using Branding.

CO 4. Assisting the students comprehend a holistic ability to develop tenable programs tomake a brand robust and seamlessly help protect and promote a product and its business.

CO 5. To enable the student to appreciate the need for practicing values, principles, and ethics in Business and to be able to acknowledge, appreciate, and apply Brands to projecta strong sense of association.

COURSE ATRICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	2	3	3	2	2	2	2	3	3
CO2	3	3	3	3	2	2	2	3	3	1	3	3
CO3	3	3	3	3	3	2	2	3	3	1	3	2
CO4	2	3	2	2	2	3	3	1	3	2	3	3
CO5	3	3	3	3	2	2	2	3	3	3	1	2
W. A	**2.8**	**3**	**2.8**	**2.6**	**2.4**	**2.4**	**2.2**	**2.4**	**2.8**	**1.8**	**2.6**	**2.6**

ELECTIVE COURSE: International Business & CSR

Course code:23C4C5

Course Learning Outcome

CO1: The students will be highlighted various concepts of the International Business process

CO2: The students will be introduced to the relationship between CSR and International Business

CO3: Understand Globalization and its impact on the Indian economy

CO4: Get introduced to international conventions relevant to CSR

CO5: Understand the challenges in Managing the Multinational Business.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO 10**	**PO 11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	-	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	2	3
CO5	3	2	3	3	3	3	3	3	3	3	2	3
W. A	**3**	**2.2**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**

ELECTIVE COURSE: Sustainability & Stakeholder ManagementCourse code: 23C4C6

Course Outcome:

CO1: The students will be introduced to the concepts and importance of sustainability

CO2: The students will get insights into stakeholders' management

CO3: Awareness of governments, NGOs, and international and supranational organizations in corporate sustainability

CO4: Ability to Develop strategies for sustainability

CO5: Knowledge of stakeholder management, Challenges, and Solutions.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	2	3	3	2	3
W. A	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**2.8**	**3**	**3**	**2.8**	**3**

ELECTIVE COURSE: Industrial RelationsCourse code: 23C4C7

COURSE LEARNING OUTCOME

CO1: Students are acquainted with the concepts, principles, and issuesconnected with trade unions.

CO2: Students are acquainted with Collective bargaining and grievance Redressals

CO3: Students Can reflect on Regulative & Protective Legislations.

CO4: Students Can reflect and Summarize Wage Related & Social Security Legislation

CO5: Students Can reflect upon New Labour Codes.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	2	2	1	2	2	2	2	2	2	2	2
CO2	3	2	3	3	3	2	2	3	2	3	3	2
CO3	3	2	3	3	3	2	1	3	2	3	3	2
CO4	3	1	3	1	3	2	2	3	2	2	3	2
CO5	3	1	2	1	1	1	1	3	2	2	3	2
W. A	**3**	**1.6**	**2.6**	**1.8**	**2.4**	**1.8**	**1.6**	**2.8**	**2**	**2.4**	**2.8**	**2**

ELECTIVE COURSE GROUP 10

TOURISM & TRAVEL MANAGEMENT

ELECTIVE COURSE: Travel Agency & Transport Management

Course code: 23C4T4

Course Outcomes:

CO1: To acquire the functions and contribution of travel agencies and tour operators to the tourism sector.

CO2: To enhance the knowledge of tour operations business and its process.

CO3: To acquire background knowledge of travel formalities.

CO4: To enhance the knowledge of transport systems in linkage with tourism aspects.

CO5: To acquire the background knowledge of aviation management

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	1	-	2	3	2	1	1	1	-	2	2
CO2	2	2	2	1	1	-	2	-	2	3	2	1
CO3	2	1	2	3	-	2	1	2	-	2	2	2
CO4	2	2	3	-	2	3	1	1	2	1	-	3
CO5	2	1	2	1	2	-	-	2	-	1	1	-
W. A	**2**	**1.4**	**2.25**	**1.75**	**2**	**2.33**	**1.25**	**1.5**	**1.66**	**1.75**	**1.75**	**2**

ELECTIVE COURSE: International Tourism **Course code: 23C4T5**

COURSE LEARNING OUTCOMES:

CO1: To acquire the knowledge of tourism resources of India.

CO2: To enhance the knowledge of the tourism resources of North Americaand South America.

CO3: To enhance the knowledge of the tourism resources of Africa, the Middle East

CO4: To enhance the knowledge of the tourism resources of Europe

CO5: To enhance the knowledge of the tourism resources of Asia and Australia

COURSE ARTICUALTION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	1	2	3	-	2	-	2	-	1	1	3
CO2	2	1	-	3	-	2	2	1	1	-	2	2
CO3	2	3	2	1	1	-	2	1	2	1	2	-
CO4	2	3	1	-	2	3	1	-	3	2	-	1
CO5	2	-	2	3	-	2	-	2	1	1	1	1
W. A	**2**	**2**	**1.75**	**2.5**	**1.5**	**2.25**	**1.6**	**1.5**	**1.75**	**1.25**	**1.5**	**1.75**

ELECTIVE COURSE: Tourism Planning & Development Course code: 23C4T6

Course Outcomes:

CO1: To acquire the theoretical background of tourism planning, and destination development.

CO2: To enhance the concepts related to institutional support in tourism destination image development.

CO3: To acquire knowledge of tourism destination promotion and publicity

CO4: To enhance the concepts related to institutional support, PPP, National, WTO,rural, and environmental management.

CO5: To acquire the knowledge of the concept of sustainable tourism planning and development.

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	1	2	-	3	-	2	1	-	2	1	3
CO2	2	1	1	2	-	3	2	2	-	1	2	2
CO3	2	3	1	2	1	2	-	1	2	1	-	2
CO4	2	1	2	-	3	2	1	-	2	-	1	-
CO5	2	1	-	2	1	1	3	2	2	1	2	1
W. A	**2**	**1.4**	**1.5**	**2**	**2**	**2**	**2**	**1.5**	**2**	**1.25**	**1.5**	**2**

ELECTIVE COURSE: Meeting, Incentive, Conference &Exposition Tourism
Course code: 23C4T7

Course Outcomes:

CO1: To acquire the knowledge of event management and its contribution to thetourism sector

CO2: To enhance the knowledge of event planning

CO3: To acquire the theoretical background of conference and conventions requirementsand functionalities

CO4: To acquire the theoretical background of trade show and exhibition requirementsand functionalities

CO5: To acquire the knowledge of incentives, and competencies to market and promote MICE tourism

COURSE ARTICULATION MATRIX

CO/PO ARTICULATION MATRIX												
CO/PO	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	1	2	2	2	-	-	1	1	3	-	1
CO2	2	2	-	1	2	3	2	-	1	1	2	3
CO3	2	1	1	2	-	2	-	1	1	2	-	1
CO4	2	2	3	-	2	-	1	1	2	3	2	2
CO5	2	1	1	2	-	2	-	2	-	2	3	1
W. A	**2**	**1.4**	**1.75**	**1.75**	**2**	**2.3**	**1.5**	**1.25**	**1.25**	**2.2**	**2.3**	**1.6**

Master of Computer Application
2023-2024

Programme Outcomes

PO1: Use emerging tools, techniques and skills necessary for computing in the real world.

PO2: Identify, formulate and solve complex computing problems to achieve substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domains.

PO3: Analyze problems, suggest appropriate solutions and justify propositions for effective decision making in the professional field.

PO4: Develop strong critical thinking skills to assess why certain solutions might not work and to save time in coming up with the right approach in the field of computing.

PO5: Create, select and apply appropriate techniques and latest Information Technology tools to forecast an outcome by utilizing data that is available.

PO6: Understand and assess societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practices.

PO7: Develop and imbibe the principles of ethics and values in profession.

PO8: Communicate effectively and efficiently as an individual, and as a member, or leader topresent the technical knowledge in multi-disciplinary settings.

PO9: Study and review literature, reports prepare documentation and make inferences to designbetter systems.

PO10: Recognize and realize the need for, and develop an ability to engage in lifelong learning.

MASTER OF COMPUTER APPLICATION

Programme Structure & Syllabus
2023-2024

List of Hard Core Courses

Sl. No.	Course Title	Credit Pattern			Credits	Course Code
		L	T	P		
1	Mathematical Foundations for Computer Applications	4	0	0	4	23BH01
2	Advanced Computer Networks	3	1	0	4	23BH02
3	Data Structures and Algorithms	3	0	1	4	23BH03
4	Operating System	3	1	0	4	23BH04
5	Software Engineering	3	1	0	4	23BH05
6	Object Oriented Programming with Java	3	0	1	4	23BH06
7	Python Programming	3	0	1	4	23BH07
8	Web Technologies	2	1	1	4	23BH08
9	Dissertation Work	0	2	10	12	23BH09

List of Soft Core Courses

Sl. No.	Course Title	Credit Pattern			Credits	Course Code
		L	T	P		
1	Data Communication and Networks	3	1	0	4	23BS01
2	Advanced Database Management System	3	0	1	4	23BS02
3	Cloud Computing	4	0	0	4	23BS03
4	System Analysis and Design	3	1	0	4	23BS04
5	Cryptography and Network Security	3	1	0	4	23BS05
6	Theory of Languages and Automata	3	0	1	4	23BS06
7	Probability and Statistics	3	1	0	4	23BS07
8	Fundamentals of Internet of Things	3	1	0	4	23BS08
9	Mobile Application Development with Android	3	0	1	4	23BS09
10	Linux Programming	3	0	1	4	23BS10
11	Information Retrieval	3	0	1	4	23BS11
12	Big Data Analytics	3	0	1	4	23BS12
13	Machine Learning using Python	3	0	1	4	23BS13
14	Advanced Java	3	0	1	4	23BS14
15	Management Information Systems	3	1	0	4	23BS15
16	Business Intelligence	3	1	0	4	23BS16
17	Entrepreneurship Development	3	1	0	4	23BS17
18	Communication Skills	3	1	0	4	23BS18
19	Professional Ethics and Human Values	3	1	0	4	23BS19
20	Cyber Security	3	1	0	4	23BS20
21	Simulation and Modeling	3	0	1	4	23BS21
22	Artificial Intelligence	3	1	0	4	23BS22
23	Research Methodology	3	1	0	4	23BS23
24	NPTEL MOOC COURSE (min. 08 weeks)	0	0	0	4	23BS24

List of Open Elective Courses

Sl. No.	Course Title	Credit Pattern			Credits	Course Code
		L	T	P		
1	World Wide Web	3	1	0	4	23BE01
2	E-Commerce	3	1	0	4	23BE02
3	Office Automation	3	1	0	4	23BE03

HC MATHEMATICAL FOUNDATIONS FOR COMPUTER APPLICATIONS 4:0:0

Outcomes:

CO1: Develop an ability to implement various techniques of mathematical logic.

CO2: Capability to apply the concepts of set theory.

CO3: Ability to enhance the knowledge of algebraic structures towards computer applications.

CO4: Ability to correlate the concepts of graph theory in computer applications.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	3	3	2	1	1	1	1	1	2
CO 2	3	3	3	2	1	1	1	1	1	2
CO 3	3	3	3	2	2	1	1	1	1	1
CO 4	3	3	3	3	2	1	1	1	1	2
Weighted Average	3	3		2.25	1.5	1	1	1	1	1.75

1: Low, 2: Moderate, 3: High

HC ADVANCED COMPUTER NETWORKS 3:1:0

Outcomes:

CO1: To employ the mechanism of Reference models and TCP/IP.

CO2: To understand the role of Transport Layer in computer networks.

CO3: Employ the techniques of TCP/IP.

CO4: Comprehend the internal working mechanism of IP Security.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	2	2	2	2	1	1	1	1	2
CO 2	3	2	2	2	2	1	1	1	1	2
CO 3	2	2	2	2	1	2	1	1	1	2
CO 4	3	3	3	2	2	2	1	1	2	2
Weighted Average	2.75	2.25	2.25	2	1.75	1.5	1	1	1.25	1.5

1: Low, 2: Moderate, 3: High

HC **DATA STRUCTURES AND ALGORITHMS**
3:0:1

Outcomes:

CO1: Analyze algorithms and algorithm correctness.

CO2: Summarize searching and sorting techniques.

CO3: Describe stack, queue and linked list operation.

CO4: Solve the problems by writing algorithms using fundamental data structures.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	2	3	3	2	1	1	1	1	1	3
CO 2	3	2	2	2	3	1	1	1	1	1
CO 3	3	2	2	2	2	1	1	1	1	1
CO 4	2	3	2	2	2	1	1	1	1	1
Weighted Average	2.5	2.5	2.25	2	2	1	1	1	1	1.5

1: Low, 2: Moderate, 3: High

HC **OPERATING SYSTEM**
3:1:0

Outcomes

CO1: Understand the usage of the operating system components and its services.

CO2: Employ the concepts of process management.

CO3: Employ the concepts of Memory Management

CO4: Apply the file handling concepts in OS perspective.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	1	2	1	-	1	1	1	1	2	1
CO 2	-	3	1	2	1	1	1	1	2	1
CO 3	-	3	1	2	1	1	1	1	2	1
CO 4	1	3	1	2	1	1	1	1	2	1
Weighted Average	1	2.75	1	2	1	1	1	1	2	1

1: Low, 2: Moderate, 3: High

HC **SOFTWARE ENGINEERING**
3:1:0

Outcomes

CO1: Gain an understanding to work in one or more significant application domains.
CO2: Develop an ability to work as an individual and as part of a multidisciplinary team to develop and deliver quality software.
CO3: Demonstrate an understanding of and apply the current theories, models, and techniques that provide a basis for the software lifecycle.
CO4: Demonstrate an ability to ensure Software Quality Assurance.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	1	2	2	2	1	2	1	3	2
CO 2	2	1	2	2	2	1	1	1	2	1
CO 3	2	2	3	2	3	1	1	1	2	1
CO 4	2	1	2	2	1	1	2	1	2	2
Weighted Average	2.25	1.25	2.25	2	2	1	1.5	1	2.25	1.5

1: Low, 2: Moderate, 3: High

HC **OBJECT ORIENTED PROGRAMMING WITH JAVA** **3:0:1**

Outcomes:

CO1: Use the syntax and semantics of java programming language and basic concepts of OOP.
CO2: Apply the class fundamentals, arrays, inheritance and polymorphism to develop reusable programs.
CO3: Apply the concepts of packages, interfaces and exception handling to develop efficient and error free codes.
CO4: Build applications using the concepts of multithreading and files.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	2	2	1	1	1	1	1	1	1
CO 2	3	2	3	3	1	1	1	1	1	1
CO 3	3	3	3	3	1	1	1	1	1	1
CO 4	3	2	1	1	1	1	1	1	1	1
Weighted Average	3	2.25	2.25	2	1	1	1	1	1	1

1: Low, 2: Moderate, 3: High

HC **PYTHON PROGRAMMING**
3:0:1

Outcomes:

CO1: Develop algorithmic solutions to simple computational problems.

CO2: Read, write, execute by hand simple Python programs.

CO3: Structure simple Python programs for solving problems.

CO4: Decompose a Python program into functions.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	2	2	2	2	2	1	1	-	-	2
CO 2	2	2	2	2	2	1	1	-	-	1
CO 3	3	2	2	1	2	-	-	1	1	1
CO 4	3	2	2	2	2	-	-	-	-	1
Weighted Average	2.5	2	2	1.75	2	1	1	1	1	1.25

1: Low, 2: Moderate, 3: High

HC **WEB TECHNOLOGIES**
2:1:1

Outcomes:

CO1: Develop an ability to implement HTML5 pages using fundamental tags.

CO2: Able to develop style sheet using CSS for a given problem.

CO3: Able to extend JavaScript to validate a form with event handler for a given problem.

CO4: Able to develop websites using web frameworks and content management systems

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	2	2	3	2	2	2	1	2	2	1
CO2	3	3	3	3	3	2	1	2	2	1
CO3	3	3	3	3	3	2	1	2	2	2
CO4	3	3	3	3	3	3	1	2	3	3
Weighted Average	2.75	2.75	3	2.75	2.75	2.25	1	2	2.25	1.75

1: Low, 2: Moderate, 3: High

HC **DISSERTATION WORK**
0:2:10

Outcomes:

CO1: Develop basic algorithm steps as a solution to a real-life problem.

CO2: Implement algorithms using latest tools that contribute to the software solution of the project using different tools.

CO3: Analyse, interpret, test and validate experimental results.

CO4: Develop research/technical report with enhanced writing/communication skills following ethical practices.

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	-	3	3	2	-	1	-	-	-	3
CO2	3	3	3	2	3	1	-	-	-	3
CO3	-	-	3	2	-	1	-	-	3	3
CO4	-	-	-	-	-	1	3	2	3	3
Weighted Average	3	3	3	2	3	1	3	2	3	3

1: Low, 2: Moderate, 3: High

SC **DATA COMMUNICATION AND NETWORKS**

3:1:0

Outcomes:

CO1: Understand and implement various types of transmissions in wired and wireless communications

CO2: Study and develop the aspects of communication channels of Data Link Layer.

CO3: Understand Design & apply various routing protocols of the Networks Layer.

CO4: Design applications using the protocols of Transport & application Layer.

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	-	1	3	-	1	1	1	2	1	2
CO2	-	1	3	-	1	1	1	2	1	1
CO3	3	1	-	3	1	1	1	2	1	3
CO4	3	1	-	3	1	1	1	2	1	3
Weighted Average	3	1	3	3	1	1	1	2	1	2.25

1: Low, 2: Moderate, 3: High

SC **ADVANCED DATABASE MANAGEMENT SYSTEM**

3:0:1

Outcome:

CO1: Determine the basic concepts, E-R Mapping and SQL basic commands.

CO2: Demonstrate the techniques of SQL, FD and Normalization.

CO3: Develop Indexing, ACID and Transaction.

CO4: Describe NoSQL database and PostgreSQL.

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	2	2	2	1	1	-	1	-	-	-
CO 2	2	3	3	2	1	1	1	-	-	-
CO 3	3	3	3	2	2	1	1	1	1	1
CO 4	2	3	2	2	3	2	1	-	1	2
Weighted Average	2.25	2.75	2.5	1.75	1.75	1.33	1	1	1	1.5

1: Low, 2: Moderate, 3: High

SC **CLOUD COMPUTING**
4:0:0

Outcomes:

- **CO1:** Demonstrate the main concepts, key technologies, strengths, and limitations of cloud computing and the possible applications.
- **CO2:** Identify the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS, public cloud, private cloud.
- **CO3:** Identify the cloud services for the individuals
- **CO4:** Acquire the knowledge on the core issues of cloud computing such as security, privacy, and interoperability.

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	2	-	1	2	3	3	2	3	3	3
CO2	2	-	1	2	2	3	2	2	2	2
CO3	2	1	1	1	2	1	1	2	2	2
CO4	1	-	2	3	2	1	1	2	-	1
Weighted Average	1.75	1	1.25	2	2.25	2	1.5	2.25	2.33	2

1: Low, 2: Moderate, 3: High

SC **SYSTEM ANALYSIS AND DESIGN**
3:1:0

Outcomes:

- **CO1:** Gather data for analysis and specify the requirements of a system.
- **CO2:** Design system components and environments.
- **CO3:** Build general and detailed models that assist programmers in implementing a system.
- **CO4:** Design a user interface for data input and output, as well as controls to protect the system and its data.

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3	1	3	1	1	1	1	-	3	-
CO2	3	1	3	1	1	1	1	3	3	-
CO3	3	1	3	1	1	1	1	3	3	3
CO4	3	1	3	1	1	1	1	3	3	3
Weighted Average	3	1	3	1	1	1	1	3	3	3

1: Low, 2: Moderate, 3: High

SC **CRYPTOGRAPHY AND NETWORK SECURITY**
3:1:0

Outcomes:

CO1: Implement the principles and practices of cryptographic techniques.

CO2: Build simple cryptosystems by applying encryption algorithms.

CO3: Comprehend secure identity management (authentication), message authentication, and digital signature techniques.

CO4: Employ the authentication protocol and web security methods.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO1	3	3	3	3	3	2	-	1	2	3
CO2	3	3	3	3	3	2	-	1	2	3
CO3	3	2	3	3	3	2	1	1	2	3
CO4	3	2	3	3	3	3	1	1	2	3
Weighted Average	3	2.5	3	3	3	2.25	1	1	2	3

1: Low, 2: Moderate, 3: High

SC **THEORY OF LANGUAGES AND AUTOMATA**
3:0:1

Outcomes:

CO1: Acquire a fundamental understanding of the core concepts in automata theory and formal languages.

CO2: Design grammars and automata (recognizers) for different language classes.

CO3: Identify formal language classes and prove language membership properties.

CO4: Prove and disprove theorems establishing key properties of formal languages and automata.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO1	2	3	3	3	1	1	1	1	2	2
CO2	2	3	3	3	1	1	1	1	1	2
CO3	2	3	3	3	1	1	1	1	1	2
CO4	2	3	3	3	1	1	1	1	1	2
Weighted Average	2	3	3	3	1	1	1	1	1.25	2

1: Low, 2: Moderate, 3: High

SC **PROBABILITY AND STATISTICS**
3:1:0

Outcomes:

- **CO1:** Apply axioms and theorems to describe events and compute probabilities also identify the types of random variables and calculate relevant probabilities.
- **CO2:** Analyse the different Techniques in Continuous Probability Distribution.
- **CO3:** Describe an appropriate statistical model for the given data and compute population parameters using appropriate estimators.
- **CO4:** Describe the Tests of Hypotheses, Types of errors, test for Significance, regression and curve fitting

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO1	2	3	3	2	3	1	1	1	2	2
CO2	2	3	3	3	3	-	1	1	2	2
CO3	2	3	3	3	3	1	1	1	1	2
CO4	2	3	3	3	3	-	1	1	2	2
Weighted Average	2	3	3	2.75	3	1	1	1	1.75	2

1: Low, 2: Moderate, 3: High

SC **FUNDAMENTALS OF INTERNET OF THINGS**
3:1:0

Outcomes:

- **CO1:** Interpret the impact of IoT networks in new architectural models.
- **CO2:** Compare and contrast the deployment of smart objects and technologies to connect them as network.
- **CO3:** Elaborate the need of IoT Access Technologies.
- **CO4:** Identify the application of IoT in Smart and Connected Cities and Public Safety.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	3	2	2	2	1	-	-	2	2
CO 2	2	2	2	2	2	1	-	-	2	2
CO 3	3	3	3	2	2	1	-	-	2	2
CO 4	2	3	2	1	2	1	1	1	2	2
Weighted Average	2.5	2.75	2.25	1.75	2	1	1	1	2	2

1: Low, 2: Moderate, 3: High

SC **MOBILE APPLICATION DEVELOPMENT WITH ANDROID**
3:0:1

Outcomes:

CO1: Build sample android application.
CO2: Develop user interfaces for android applications.
CO3: Develop android applications to share data between different applications.
CO4: Deploy android applications.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	3	2	3	2	2	1	1	2	2
CO 2	3	3	3	3	3	2	1	2	2	2
CO 3	3	3	3	3	2	3	1	2	3	3
CO 4	3	3	3	3	3	2	1	2	3	3
Weighted Average	3	3	2.75	3	2.50	2.25	1	1.75	2.5	2.5

1: Low, 2: Moderate, 3: High

SC **LINUX PROGRAMMING**
3:0:1

Outcomes:

CO1: Work confidently in Linux environment with an understanding of the architecture and shell programming.
CO2: Work with sed/awk and gain ability to write programs using file and directory related system calls
CO3: Ability to handle processes using process related system calls
CO4: Ability to write communicating programs using different IPC mechanisms and Berkeley sockets.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	2	1	-	1	2	1	1	1	1
CO 2	3	2	1	-	1	-	1	1	1	1
CO 3	3	2	1	1	1	-	1	1	1	1
CO 4	3	2	1	1	1	-	1	1	1	1
Weighted Average	3	2	1	1	1	2	1	1	1	1

1: Low, 2: Moderate, 3: High

SC **INFORMATION RETRIEVAL**
3:0:1

Outcomes:

CO1: Locate relevant information in large collections of data.
CO2: Impart features of retrieval systems for Text data.
CO3: Analyze the performance of retrieval systems using test collection.
CO4: Implement different clustering algorithms.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	1	3	2	-	2	2	1	1	1	1
CO 2	-	3	3	2	2	-	1	1	1	1
CO 3	1	3	3	2	2	-	1	1	1	1
CO 4	1	3	3	2	2	-	1	1	1	1
Weighted Average	1	3	2.75	2	2	2	1	1	1	1

1: Low, 2: Moderate, 3: High

SC **BIG DATA ANALYTICS**
3:0:1

Outcomes:

CO1: Apply the Data Analytics Life Cycle to real life cases.
CO2: Process Data with Hadoop.
CO3: Apply the necessary techniques for data analytics.
CO4: Demonstrate Data Analysis using R.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	2	2	2	3	1	1	-	-	-
CO 2	3	3	2	3	3	1	1	1	2	1
CO 3	3	2	3	3	3	2	1	2	3	3
CO 4	3	2	3	3	3	2	1	2	3	3
Weighted Average	3	2.25	2.5	2.75	3	1.5	1	1.25	2	1.75

1: Low, 2: Moderate, 3: High

SC MACHINE LEARNING USING PYTHON 3:0:1

Outcomes:

CO1: Identify the need for Machine Learning using Python, appropriate data frames and its operations.
CO2: Ability to build and validate linear regression models
CO3: Ability understands different classification techniques and build classification models
CO4: Ability to use unsupervised learning techniques to cluster data and Apply Scikit library for Machine Learning.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO1	3	3	3	3	3	2	1	1	3	3
CO2	3	3	3	3	3	2	1	1	3	3
CO3	3	3	3	3	3	3	1	1	3	3
CO4	3	3	3	3	3	2	1	1	3	3
Weighted Average	3	3	3	3	3	2.25	1	1	3	3

1: Low, 2: Moderate, 3: High

SC ADVANCED JAVA 3:0:1

Outcomes:

CO1: Develop component-based Java software using JavaBeans.
CO2: Develop server-side programs in the form of servlets.
CO3: Implement Entity Java bean in stateless and stateful environment.
CO4: Employ the concepts of EJB and JAR files.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	3	2	-	1	3	1	1	1	-	2
CO 2	3	2	2	2	3	1	1	1	2	3
CO 3	3	3	3	2	3	1	1	1	2	3
CO 4	3	2	2	1	3	1	1	1	2	3
Weighted average	3	2.25	1.75	1.5	3	1	1	1	1.5	2.75

1: Low, 2: Moderate, 3: High

SC MANAGEMENT INFORMATION SYSTEMS 3:1:0

Outcomes:

CO1: Explain the role of IS in business.
CO2: Ability to explain different enterprise management and functional management systems in business.
CO3: Identify the applications of e-commerce and issues of e-commerce.
CO4: Understand decision support systems.

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	2	1	2	2	1	1	1	1	1	1
CO2	2	1	2	2	2	2	1	1	1	1
CO3	1	1	3	3	2	1	1	1	1	1
CO4	1	1	3	3	2	1	1	1	1	1
Weighted Average	1.5	1	2.5	2.5	1.75	1.25	1	1	1	1

1: Low, 2: Moderate, 3: High

SC BUSINESS INTELLIGENCE 3:1:0

Outcomes:

CO1: Acquire the knowledge on Business Intelligence methodologies.
CO2: Comprehend the User models of Business Intelligence in real time scenarios.
CO3: Employ the lifecycle strategies on various BI capabilities.
CO4: Compare and contrast various BI implementations in major companies.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	2	2	1	1	1	1	1	1	1	1
CO 2	3	2	1	2	1	1	1	1	1	1
CO 3	3	3	1	2	1	1	1	1	1	1
CO 4	3	3	1	1	1	1	1	1	1	1
Weighted Average	2.75	2.5	1	1.5	1	1	1	1	1	1

1: Low, 2: Moderate, 3: High

SC ENTREPRENEURSHIP DEVELOPMENT 3:1:0

Outcomes:

CO1: Analyze the history and need for entrepreneurship
CO2: Employ the functions of women and rural entrepreneurship
CO3: Inculcating the behaviors of entrepreneurs
CO4: Comprehend the need and importance of management

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	2	1	3	2	1	2	1	1	1	1
CO2	1	1	1	1	1	2	1	2	1	2
CO3	-	1	2	1	1	2	1	1	1	1
CO4	-	1	1	1	1	1	1	3	2	1
Weighted Average	0.75	1	1.75	1.5	1	1.75	1	1.75	1.25	1.25

1: Low, 2: Moderate, 3: High

SC COMMUNICATION SKILLS 3:1:0

Outcomes:

CO1: Understand and apply knowledge of human communication and language processes as they occur across various contexts from multiple perspectives.
CO2: Understand and evaluate key theoretical approaches used in the interdisciplinary field of communication.
CO3: Find, use, and evaluate primary academic writing associated with the communication discipline.
CO4: Communicate effectively orally and in writing.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	1	-	-	-	2	-	3	3	2	3
CO 2	1	-	3	3	2	3	-	3	3	3
CO 3	1	3	3	-	2	2	-	3	3	3
CO 4	1	-	3	3	-	2	-	3	3	3
Weighted Average	1	3	3	3	2	2.33	3	3	2.75	3

1: Low, 2: Moderate, 3: High

SC PROFESSIONAL ETHICS AND HUMAN VALUES 3:1:0

Outcomes:

CO1: Implement the aspects of Human Values.
CO2: Interpret the ethics of engineering and its associated responsibilities.
CO3: Employ the code of ethics in their profession.
CO4: Display the awareness of Global issues in Ethics.

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	1	-	1	1	1	2	3	2	1	3
CO2	1	2	1	1	1	2	3	2	1	3
CO3	1	-	1	1	1	2	3	2	1	3
CO4	1	-	1	1	1	2	3	2	1	3
Weighted Average	1	2	1	1	1	2	3	2	1	3

1: Low, 2: Moderate, 3: High

SC CYBER SECURITY 3:1:0

Outcomes:

CO1: Understand the concept of cybercrime and offenses.
CO2: Analyze the problems relating to cyber-crimes using mobile phones.
CO3: Demonstrate the various attacks of cyber-crime.
CO4: Understand and apply Computer Forensics at problem areas.

Course articulation matrix:

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	2	1	2	1	2	2	1	1	1	1
CO2	3	1	3	3	2	2	1	1	1	1
CO3	2	1	-	2	2	1	-	1	1	-
CO4	1	1	2	2	2	1	-	1	1	-
Weighted Average	2	1	1.75	2	2	1.5	0.5	1	1	0.5

1: Low, 2: Moderate, 3: High

SC **SIMULATION AND MODELING**
3:0:1

Outcomes:

- **CO1:** Analyze the different Components of System and identify the Applications of Simulation.
- **CO2:** Implement different algorithms associated with generation of Random numbers and test for Random numbers.
- **CO3:** Implement different methods of generating the Random Variants.
- **CO4:** Analyze the different techniques in Verification and Validation of simulation models and the output analysis for different types of Simulations.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO1	2	1	1	1	1	1	1	1	2	2
CO2	3	3	3	3	3	-	1	1	1	1
CO3	2	2	2	2	2	-	1	-	1	1
CO4	2	2	2	1	2	-	1	-	1	1
Weighted Average	2.25	2	2	1.75	2	1	1	1	1.25	1.25

1: Low, 2: Moderate, 3: High

SC **ARTIFICIAL INTELLIGENCE**
3:1:0

Outcomes:

- **CO1:** Express the modern view of AI and its foundation.
- **CO2:** Illustrate Search Strategies with algorithms and Problems.
- **CO3:** Implement Proportional logic and apply inference rules.
- **CO4:** Apply suitable techniques for NLP and Game Playing.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO1	3	3	3	3	3	3	2	2	2	3
CO2	3	3	3	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	2	2	2	3
CO4	3	3	3	3	3	3	2	2	3	3
Weighted Average	3	3	3	3	3	3	2.25	2	2.5	3

1: Low, 2: Moderate, 3: High

SC **RESEARCH METHODOLOGY**
3:1:0

OUTCOMES:

- **CO1:** Identify the suitable research methods and articulate the research steps in a proper way.
- **CO2:** Explain the functions of the literature review in research, carrying out a literature search.
- **CO3:** Explain various research designs, sampling designs, measurement and scaling techniques.
- **CO4:** Perform the data collection from various sources segregate the primary and secondary.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO1	3	2	2	1	1	2	2	1	2	1
CO2	-	2	1	1	1	1	1	1	3	1
CO3	1	2	1	1	1	1	1	1	1	1
CO4	2	1	1	1	1	2	1	1	1	1
Weighted Average	2	1.75	1.25	1	1	1.5	1.25	1	1.75	1

1: Low, 2: Moderate, 3: High

OE **WORLD WIDE WEB**
3:1:0

Outcomes:

- **CO1:** Understand the working scheme of the Internet and World Wide Web.
- **CO2:** Evaluate the various protocols of the Internet.
- **CO3:** Comprehend and demonstrate the application of Hypertext Mark-up Language (HTML).
- **CO4:** Apply the various security tools and understand the need of security measures.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO 1	2	1	1	1	-	-	1	1	1	1
CO 2	2	1	1	1	-	-	1	1	1	1
CO 3	2	1	1	1	1	-	1	1	1	1
CO 4	2	2	2	1	1	1	1	1	1	1
Weighted Average	2	1.25	1.25	1	0.5	1	1	1	1	1

1: Low, 2: Moderate, 3: High

OE **E-COMMERCE**
3:1:0

Outcomes:

CO1: Analyse the impact of E-commerce on business models and strategy
CO2: Describe Internet trading relationships including Business to Consumer, Business-to- Business, Intra-organizational structures.
CO3: Assess electronic payment systems and its securities.
CO4: Recognize and discuss global E-commerce issues.

Course articulation matrix:

PO/CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	1	1	2	2	2	2	1	1	2	2
CO2	2	1	2	2	2	1	1	1	1	1
CO3	2	1	1	1	2	1	1	1	1	1
CO4	2	1	2	2	2	1	1	1	1	2
Weighted Average	1.75	1	1.75	1.75	2	1.25	1	1	1.25	1.5

1: Low, 2: Moderate, 3: High

OE **OFFICE AUTOMATION**
3:1:0

Outcomes:

CO1: Understand the basics of computer hardware and software.
CO2: Prepare documents of different types.
CO3: Ability to develop and use spreadsheets for tabulating and analysing for productivity.
CO4: Prepare presentations.

Course articulation matrix:

PO / CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO1	1	1	1	1	1	-	1	1	1	1
CO2	1	1	1	1	1	1	1	1	1	1
CO3	1	1	1	1	1	1	1	1	1	1
CO4	1	1	1	1	1	1	1	1	1	1
Weighted Average	1	1	1	1	1	1	1	1	1	1

1: Low, 2: Moderate, 3: High

DEPARTMENT OF STUDIES IN CHEMISTRY

Programme Outcomes

PO1: Students will have a strong foundation in the fundamentals and applications of current theoretical and practical chemistry in Analytical, Inorganic, Organic and Physical Chemistry.

PO2: Students will be able to design and carry out scientific experiments and accurately record and analyze the results of the experiments.

PO3: Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems.

PO4: Students will be able to explore new areas of research in both chemistry and allied fields such as Biochemistry, Material Chemistry, Pharmaceutical chemistry and Chemical biology and related technology.

PO5: Students will understand the central role of chemistry to our society which includes understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.

PO6: Create awareness and sense of responsibilities towards environment and apply knowledge to solve the issues related to Environmental pollution.

PO7: Apply knowledge to build up small scale industry for developing endogenous product

PO8: Provide an opportunity to act as team player by contributing in laboratory, field-based situation and industry.

PO9: A post-graduation in Chemistry provides the opportunities in educational sector, pharmaceutical companies and chemical industries.

POST GRADUATE WING OF SBRR MAHAJANA FIRST GRADE COLLEGE (AUTONOMOUS)

POOJA BHAGAVAT MEMORIAL MAHAJANA EDUCATION CENTRE

K.R.S ROAD, METAGALLI, MYSURU-570016, KARNATAKA, INDIA

DEPARTMENT OF STUDIES IN CHEMISTRY

Programme Structure & Syllabus

2023-2024

List of Hard Core Courses

Sl. No.	Course Title	Credit Pattern			Credits	Course Code
		L	T	P		
1.	Concepts & Models of Inorganic Chemistry	3	0	0	3	22H101
2.	Stereochemistry & Reaction Mechanism	3	0	0	3	22H102
3.	Basic Physical Chemistry	3	0	0	3	22H103
4.	Analytical data assessment and separation techniques	3	0	0	3	22H104
5.	Coordination Chemistry	3	0	0	3	22H201
6.	Synthetic Organic Chemistry	3	0	0	3	22H202
7.	Principles of Physical Chemistry	3	0	0	3	22H203
8.	Molecular Symmetry and Spectroscopy	3	0	0	3	22H204
9.	Advanced Inorganic Chemistry	3	0	0	3	22H301
10.	Organometallic and Photochemistry	3	0	0	3	22H302
11.	Advanced Physical Chemistry	3	0	0	3	22H303
12.	Chemical Spectroscopy	3	0	0	3	22H304
13.	Bioinorganic Chemistry	3	0	0	3	22H401
14.	Heterocyclic and Bioorganic Chemistry	3	0	0	3	22H402
15.	Nuclear, Radiation and Photochemistry	3	0	0	3	22H403
16.	Dissertation / Project work	0	0	3	3	22H404

List of Soft Core Courses

Sl. No.	Course Title	Credit Pattern			Credits	Course Code
		L	T	P		
1.	Titrimetric Analysis	2	0	0	2	22H105
2.	Chemistry of Selected Elements	2	0	0	2	22H106
3.	Chemistry of Natural Products-I	2	0	0	2	22H107
4.	Biophysical Chemistry	2	0	0	2	22H108
5.	Analytical Practicals-I	0	0	4	4	22H109
6.	Inorganic Practicals-I	0	0	4	4	22H110
7.	Organic Practicals-I	0	0	4	4	22H111
8.	Physical Practicals-I	0	0	4	4	22H112
9.	Electrochemical methods of chemical analysis	2	0	0	2	22H305
10.	Frontiers in Inorganic Chemistry	2	0	0	2	22H306
11.	Chemistry of Natural Products-II	2	0	0	2	22H307
12.	Material Chemistry	2	0	0	2	22H308
13.	Analytical Practicals-II	0	0	2	2	22H309
14.	Inorganic Practicals- II	0	0	2	2	22H310
15.	Organic Practicals - II	0	0	2	2	22H311
16.	Physical Practicals - II	0	0	2	2	22H312
17.	Automated and Methods Chemical Analysis	2	0	0	2	22H405
18.	Bioinorganic Photochemistry	2	0	0	2	22H406
19.	Medicinal Chemistry	2	0	0	2	22H407
20.	Quantum Chemistry and Biosensors	2	0	0	2	22H408

List of open elective Courses

Sl. No.	Course Title	Credit Pattern			Credits	Course Code
		L	T	P		
1.	General Chemistry	4	0	0	4	22H205

CHI HCT: 1.1. CONCEPT AND MODELS OF INORGANIC CHEMISTRY

Total Credits: 3 **Credit Pattern: 3:0:0** **No. of hours: 3 per week**

Course Outcome

CO1: Structures of ionic solids and their lattice energy calculations. Further, the use of VSEPR concepts in analyzing the structures of simple molecules.

CO2: Various acid-base concepts and their applications in different fields. Also, understand the utility of various non-aqueous solvents in inorganic synthesis.

CO3: The periodic properties of the elements, complete understanding of the chemistry of lanthanides, actinides and their applications.

Course Articulation Matrix

POs COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	2	2	2	3	1	1
CO2	3	1	3	3	3	3	3	1	1
CO3	3	1	3	3	2	2	2	2	2
	3	1	3	2.67	2.33	2.33	2.67	1.33	1.33

CHO HCT: 1.2. STEREOCHEMISTRY AND REACTION MECHANISM

Total Credits: 3 **Credit Pattern: 3:0:0** **No. of hours: 3 per week**

Course Outcome

CO1: Optical and geometrical isomerism of Organic compounds. Application of stereo chemistry in the study of regioselective and regiospecific reactions.

CO2: The study of HMOT and its applications to simple organic molecules, and also understand the concept of aromaticity and methods of determining reaction mechanism.

CO3: Nucleophilic, electrophilic and elimination reactions

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	2	2	2	1	2	1
CO2	3	1	3	3	2	2	1	1	2
CO3	3	1	3	3	1	2	2	1	2
	3	1	3	2.67	1.67	2	1.33	1.33	1.67

CHP HCT: 1.3. BASIC PHYSICAL CHEMISTRY

Total Credits: 3 **Credit Pattern: 3:0:0** **No. of hours: 3 per week**

Course Outcome:

CO1: The completion of this course will enable the students to gain the knowledge on fundamentals and theoretical background on the concepts of chemical thermodynamics, chemical kinetics and electrochemistry of solutions.

CO2: This helps in understanding the stability and energetics of reaction.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	2	3	3	3	2	2
CO2	3	1	3	2	2	3	3	2	2
	3	1	3	2	2.5	3	3	2	2

CHA HCT: 1.4. ANALYTICAL DATA ASSESSMENT AND SEPARATION TECHNIQUES

Total Credits: 3 **Credit Pattern: 3:0:0** **No. of hours: 3 per week**

Course outcome:

CO1: To enhance the skills on sampling, purification, characterizations and data analysis using instrumental techniques.

CO2: Build a foundation of chemical principles for understanding the chemical constituents in samples.

CO3: To understand the basic Principle of Instrumentation and analytical applications

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	2	3	1	1	1	2
CO2	3	1	3	2	3	2	2	1	1
CO3	3	2	3	2	1	2	1	1	2
Avg.	3	1.33	3	2	2.33	1.67	1.33	1	1.67

CHA SCP: 1.1/2.1. ANALYTICAL CHEMISTRY PRACTICALS-I

Total Credits: 4 **Credit Pattern: 0:0:4** **No. of hours: 8 per week**

Course Outcomes

CO1: Analyze various samples with different classical and simple instrumental skills.

CO2: Obtain knowledge for selection of analytical methods with suitable technique being adopted for the analysis different samples like, water, laboratory chemicals and reagents, body fluids such as urine etc.

CO3: Distinguish classical and instrumental methods

CO4: Propose and conduct experiment for quantification of individual analytes

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	3	2	2	3	2	1	3	2
CO2	3	3	2	2	3	3	2	3	2
CO3	3	3	2	2	2	3	2	3	3
CO4	3	3	2	2	3	3	3	3	2
Avg	3	3	2	2	2.75	2.75	2	3	3

CHI SCP: 1.2/2.2. INORGANIC CHEMISTRY PRACTICALS-I

Total Credits: 4 **Credit Pattern: 0:0:4** **No. of hours: 8 per week**

Course outcome:

CO1: Determination of various analytes presents in different ore samples by volumetric, gravimetric and spectrophotometric methods.

CO2: The chemistry of redox, complexometric and indirect methods

CO3: The principle in the semi-micro analysis of an inorganic salt mixture

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3

CHO SCP: 1.3/2.3. ORGANIC CHEMISTRY PRACTICALS-I

Total Credits: 4 **Credit Pattern: 0:0:4** **No. of hours: 8 per week**

Course outcome:

CO1: Students are involved in the multi-step synthesis of different organic compounds.

CO2: Understand the qualitative analysis of binary mixture of organic compounds through separation, identification of functional groups and preparation of solid derivatives.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	3	2	3	1	2	2	3	1
CO2	3	3	3	1	1	3	3	3	2
Avg	3	3	2.5	2	1	2.5	2.5	3	1.5

CHP SCP: 1.4/2.4. PHYSICAL CHEMISTRY PRACTICALS-I

Total Credits: 4 **Credit Pattern: 0:0:4** **No. of hours: 8 per week**

Course outcome:

CO1: After the completion of this course, the students can able to develop the experimental skill and theoretical interpretation of experimental results of many physical chemistry experiments of chemical kinetics in solution phase, thermodynamics, electrochemistry and spectrophotometry.

CO2: This helps in academics, research and industries.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	3	2	1	3	1	1	3	3
CO2	3	3	2	3	1	1	2	3	3
Avg.	3	3	2	2	2	1	1.5	3	3

SOFT CORE PAPERS

CHA SCT: 1.1/2.1. TITRIMETRIC ANALYSIS

Total Credits: 2 **Credit Pattern: 2:0:0** **No. of hours: 2 per week**

Course outcome:

CO1: Understand on quantitative and qualitative methods of analysis with relevant equilibrium chemistry.

CO2: Build the interest in students in developing good experimental protocols, and in interpreting experimental results.

CO3: Develop the ideas with the fundamental aspects in analytical chemistry.

CO4: Gain analytical knowledge for the quantitative analysis of various samples of different origin under titrimetric aspects.

CO5: Learn method development and validation features so that they will become outstanding basement for their career in various industries.

CO5: Learn statistical aspects from which the spirit of assessing the results will be enhanced.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	1	1	1	2	2	1	2
CO2	3	1	2	1	1	2	2	1	3
CO3	3	1	2	1	2	2	1	1	2
CO4	1	1	1	1	2	2	1	1	1
CO5	3	1	3	2	1	2	2	1	2
CO6	3	1	3	2	1	2	1	1	1
Avg.	2.66	1	2	1.33	1.33	2	1.5	1	1.83

CHI SCT: 1.2/2.2. CHEMISTRY OF SELECTED ELEMENTS

Total Credits: 2 **Credit Pattern: 2:0:0** **No. of hours: 2 per week**

Course outcome:

CO1: Understand the chemistry of hydrogen and group 2 elements.

CO2: The chemistry of pseudo halogens, interhalogens and their halogen compounds.

CO3: The chemistry of xenon and other noble gas compounds.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	2	1	2	1	2	2
CO2	2	1	3	2	1	2	1	2	1
CO3	2	2	2	1	1	2	1	2	1
Avg	2.33	1.33	2.67	1.67	1	2	1	2	1.33

CHO SCT: 1.3/2.3. CHEMISTRY OF NATURAL PRODUCTS-I

Total Credits: 2 **Credit Pattern: 2:0:0** **No. of hours: 2 per week**

Course outcome:

CO1: Acquire the knowledge of chemistry of lipids, prostaglandins and terpenoids.

CO2: Understand the biological importance of chlorophyll and porphyrins.

CO3: Chemistry of flavonoids and isoflavonoids.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	2	1	2	1	1	1	3	2	1
CO2	3	1	1	2	2	1	3	2	2
CO3	1	1	2	2	1	1	3	2	1
Avg	2	1	1.67	1.67	1.33	1	3	2	1.33

CHP SCT: 1.4/2.4. BIOPHYSICAL CHEMISTRY

Total Credits: 2 **Credit Pattern: 2:0:0** **No. of hours: 2 per week**

Course outcome:

CO1: After the completion of this course, the students gain the knowledge on theory and principles of biophysical chemistry and pharmacokinetics.

CO2: This course helps to understanding the bio-availability and different pharmacokinetic parameters of drugs in the living system.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	3	2	3	2	3	2
CO2	2	1	3	1	1	3	1	1	2
Avg	2.5	1	3	2	1.5	3	1.5	2	2

SECOND SEMESTER
HARD CORE PAPERS
CHI HCT: 2.1. COORDINATION CHEMISTRY

Total Credits: 3 **Credit Pattern: 3:0:0** **No. of hours: 3 per week**

Course outcome:

CO1: Gain the knowledge of preparative methods of coordination compounds and geometries of different coordination numbers.

CO2: Understand the CFT and MOT bonding theories of metal complexes

CO3: Electronic spectra, magnetic properties and infrared spectroscopy of coordination compounds. In addition, understand the reaction mechanism and photochemistry of coordination compounds.

Course Articulation Matrix

Pos / Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	2	3	1	1	1	2
CO2	3	2	3	2	3	1	1	1	2
CO3	3	2	3	3	3	3	2	2	3
Avg	3	2	2.67	2.33	3	1.33	1.33	1.33	2.33

CHO HCT: 2.2. SYNTHETIC ORGANIC CHEMISTRY

Total Credits: 3 **Credit Pattern: 3:0:0** **No. of hours: 3 per week**

Course outcome:

CO1: Students are familiar about chemistry of oxidants, reductants and their applications in the organic synthesis.

CO2: Understand the various catalysts in organic synthesis by known naming reactions.

CO3: Retro-synthesis and molecular rearrangement.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	2	2	2	1	2	2
CO2	3	1	3	1	2	2	1	2	2
CO3	3	1	3	3	1	2	2	2	3
Avg	3	1	3	2	1.67	2	1.33	2	2.67

CHP HCT: 2.3. PRINCIPLES OF PHYSICAL CHEMISTRY

Total Credits: 3 **Credit Pattern: 3:0:0** **No. of hours: 3 per week**

Course outcome:

CO1: Principles of Quantum chemistry and theoretical calculations of energies of molecules and chemical reactions.

CO2: Apply solutions of the Schrödinger equation for simple systems (particle in a box, rigid rotor, harmonic oscillator) to real systems (vibrational, rotational, and electronic energy states) in determining the energy of stationary states.

CO3: Explain angular momentum as possessed by atomic or molecular systems, various descriptions of how angular momentum can be coupled, and how conservation of angular momentum is important to spectroscopy.

CO4: Concepts and applicability of statistical thermodynamics in the calculations of different energies in the reacting system. Applications of phase rule for separation of the metals from ore.

CO5: Fundamentals of polymers and their applications in controlling the quality and waste management of polymer product.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	3	2	1	2	1	1	2
CO2	3	2	3	1	2	2	1	1	1
CO3	3	2	3	1	1	2	1	1	1
CO4	3	2	3	1	2	2	1	1	1
CO5	3	2	3	4	3	2	3	2	3
Avg	3	2	3	1.8	1.8	2	1.40	1.20	1.60

CHG HCT: 2.4. MOLECULAR SYMMETRY AND SPECTROSCOPY

Total Credits: 3 **Credit Pattern: 3:0:0** **No. of hours: 3 per week**

Course outcome:

CO1: Molecular symmetry and applications of group theory to CFT, hybridization, MOT and vibrational spectroscopy.

CO2: Theory and principles of Rotation, Vibration and Raman Spectroscopy.

CO3: Theory and principles Electronic and Resonance Raman spectroscopy.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	3	1	2	1	1	3
CO2	3	1	3	3	1	2	1	1	2
CO3	3	1	3	2	2	2	1	1	2
Avg	3	1	3	2.67	1.33	2	1	1	2.33

OPEN ELECTIVE (FOR NON-CHEMISTRY STUDENTS ONLY)
CH OET:2.1/3.1- GENERAL CHEMISTRY

Total Credits: 4 **Credit Pattern: 4:0:0** **No. of hours: 4 per week**

Course outcome:

CO1: Periodic properties of elements, structure and bonding of ionic compounds as well as various concepts of acids and bases.

CO2: Hybridization, bonding and molecular structure of simple organic molecules, and also, biological importance of natural products.

CO3: Basic concepts of thermodynamics, chemical kinetics, electrochemistry and ionic equilibria and their applications.

CO4: Statistical evaluation of experimental data, concept of titrimetric and chromatographic methods.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	1	3	2	2	2	1	1	2
CO2	3	1	3	2	1	1	1	1	3
CO3	3	1	3	2	3	2	1	1	3
CO4	3	2	3	3	2	3	2	1	3
Avg	3	1.25	3	2.25	2	2	1.25	1	2.75

THIRD SEMESTER HARD CORE PAPERS

CHI HCT: 3.1. ADVANCED INORGANIC CHEMISTRY

Total Credits: 3 **Credit Pattern: 3:0:0** **No. of hours: 3 per week**

Course outcome:

CO1: Fundamental concepts of organometallic chemistry and synthesis, structure and bonding in different organometallics and their applications.

CO2: Homogeneous and heterogeneous catalysts and their applications in the synthesis of organic compounds in industries.

CO3: Chemistry of main group elements, metal clusters, silicates and silicones and their applications in day to day life.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	2	2	2	2	2	1	2	2	3	3
CO2	3	1	2	1	1	1	2	1	2	2	3	2
CO3	3	1	2	2	2	2	1	1	2	1	1	1
Weighted Average	3	1	2	1.66	1.66	1.66	1.66	1	2	1.66	2.33	2

CHO HCT: 3.2. ORGANOMETALLIC AND PHOTOCHEMISTRY

Total Credits: 3 **Credit Pattern: 3:0:0** **No. of hours: 3 per week**

Course outcome:

CO1: Basic concepts of photochemistry and pericyclic reactions and their usefulness in the synthesis of many organic compounds.

CO2: Synthesis of organic compounds using different organometallic compounds as catalysts.

CO3: Asymmetric synthesis of organic compounds using chiral compounds.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	2	2	2	1	2	1	2	3	3
CO2	2	1	2	1	1	1	2	2	2	2	3	2
CO3	2	1	1	2	2	1	1	2	2	1	1	1
Weighted Average	2	1	1.66	1.66	1.66	1.33	1.33	2	1.66	1.66	2.33	2

CHP HCT: 3.3. ADVANCED PHYSICAL CHEMISTRY

Total Credits: 3 **Credit Pattern: 3:0:0** **No. of hours: 3 per week**

Course outcome:

CO1: Applications of reaction kinetics help in correlating the rates of biological and chemical reactions.

CO2: Theory and applications of electrochemical systems helps in the field of e-waste management and protection of metals.

CO3: Fundamentals of X-ray crystallography and structural interpretation by various X-ray diffraction techniques.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	1	2	2	2	2	2	2	2	3	3
CO2	3	3	2	1	1	2	2	2	2	2	3	2
CO3	3	3	1	2	2	1	2	2	2	1	1	1
Weighted Average	3	3	1.33	1.66	1.66	1.66	2	2	2	1.66	2.33	2

CHG HCT: 3.4. CHEMICAL SPECTROSCOPY

Total Credits: 3 **Credit Pattern: 3:0:0** **No. of hours: 3 per week**

Course Outcome:

CO1: Understand the spectroscopic techniques such as NMR, IR, UV, and MS for recording and interpretation of spectra.

CO2: Understand the characterization of chemical compounds. To learn electric and magnetic properties of radiation, molecules and bulk matter and solve the problems related to these properties.

CO3: Understanding the various fragmentation reactions of organic molecules.

CO4: Predict the NMR, IR, UV, and MS spectra from a given molecular structure, including fragment-ions in MS.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	2	2	2	2	2	2	2	3	3
CO2	3	1	2	1	2	2	2	2	2	2	3	2
CO3	3	1	2	2	2	2	1	2	2	1	1	1
CO4	3	1	2	1	2	2	2	2	2	2	3	2
CO5	3	1	2	2	2	2	2	2	2	2	1	3
Weighted Average	3	1.2	1.8	1.6	2	2	1.8	2	2	1.8	2.2	2.2

SOFT CORE PRACTICALS

CHA SCP: 3.1/4.1. ANALYTICAL CHEMISTRY PRACTICALS-II

Total Credits: 2 **Credit Pattern: 0:0:2** **No. of hours: 4 per week**

Course Outcomes:

CO1: After studying this course, the student to: Get experience on analysis of various complex mixtures by following multistep reactions.

CO2: Acquire the knowledge on handling instruments and to overcome the general problems arises during the analysis.

CO3: Acquire industrial skills required for sampling, analytical and interpretation and presentation of results.

CO4: Possess adequate knowledge on literature search for developed analytical methods.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	2	2	2	2	2	2	2	3	3
CO2	3	2	2	1	2	2	2	2	2	2	3	2
CO3	3	2	2	2	2	2	1	2	2	1	1	1
CO4	2	2	2	2	2	2	2	1	2	3	2	1
Weighted Average	3	2	1.75	1.75	2	2	1.75	1.75	2	2	2.25	1.75

CHI SCP: 3.2/4.2. INORGANIC CHEMISTRY PRACTICALS –II

Total Credits: 2 **Credit Pattern: 0:0:2** **No. of hours: 4 per week**

Course outcome:

CO1: Determination of alloy samples and understanding the electrochemical deposition of metals.

CO2: Preparation and characterization of coordination compounds.

CO3: Determination of composition, stability constant and magnetic susceptibility of metal complexes.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	2	2	2	2	2	2	2	2	3	3
CO2	2	3	2	1	2	1	2	2	2	2	3	2
CO3	2	3	2	2	2	2	2	2	2	1	1	1
Weighted Average	2	3	2	1.66	2	1.66	2	2	2	1.66	2.33	2

CHO SCP: 3.3/4.3. ORGANIC CHEMISTRY PRACTICALS- II

Total Credits: 2 **Credit Pattern: 0:0:2** **No. of hours: 4 per week**

Course outcome:

CO1: The isolation of caffeine, carotene, lycopene, cincole, azelaic acid and piperine from respective natural sources.

CO2: Estimation of ketones, sugars, nitro and amino groups in natural products.

CO3: Interpret UV, IR, NMR and MS data of different organic compounds.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	2	2	2	2	2	2	2	3	3
CO2	2	1	2	1	2	1	1	2	2	2	3	2
CO3	2	1	2	1	2	2	1	2	2	1	1	1
Weighted Average	2	1	1.66	1.33	2	1.66	1.33	2	2	1.66	2.33	2

CHP SCP: 3.4/4.4. PHYSICAL CHEMISTRY PRACTICALS-II

Total Credits: 2 **Credit Pattern: 0:0:2** **No. of hours: 4 per week**

Course outcome:

CO1: Students can able to develop experimental skill and interpretation of plausible mechanisms of reactions.

CO2: Gain practical knowledge on the theoretical basis of electrochemistry, thermodynamics, and spectrophotometry experiments.

CO3: This helps in academics, research and industries.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	2	2	2	2	2	2	2	3	3
CO2	2	1	2	2	1	2	2	2	2	2	3	2
CO3	2	1	2	2	2	2	1	2	2	1	1	1
Weighted Average	2	1	2	2	1.66	2	1.66	2	2	1.66	2.33	2

SOFT CORE PAPERS

CHA SCT: 3.1. ELECTROCHEMICAL METHODS OF CHEMICAL ANALYSIS

Total Credits: 2 **Credit Pattern: 2:0:0** **No. of hours: 2 per week**

Course Outcome:

CO1: To understand the reaction kinetics
CO2: To gain the principles of radiochemical methods
CO3: To understand the applicability of radiometric assays

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	1	2	2	2	3	2	2	3	3
CO2	2	2	1	1	1	1	2	3	2	2	3	2
CO3	1	2	1	1	2	1	2	3	2	1	1	1
Weighted Average	1.66	2	1	1	1.66	1.33	2	3	2	1.66	2.33	2

CHI SCT: 3.2. FRONTIERS IN INORGANIC CHEMISTRY

Total Credits: 2 **Credit Pattern: 2:0:0** **No. of hours: 2 per week**

Course Outcome:

CO1: Gain knowledge on design and synthesis of new inorganic materials.

CO2: Fabrication and characterization of nanomaterials.

CO3: Applications of ceramics, pigments, silicates and biomaterials.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	2	2	2	1	2	2	3	3
CO2	1	2	1	2	1	2	2	1	2	2	3	2
CO3	2	2	1	2	2	2	2	1	2	1	1	1
Weighted Average	1.66	2	1.33	2	1.66	2	2	1	2	1.66	2.33	2

CHO 3.3 CHEMISTRY OF NATURAL PRODUCTS-II

Total Credits: 2 **Credit Pattern: 2:0:0** **No. of hours: 2 per week**

Course outcome:

CO1: Chemistry of alkaloids and their biological significances.

CO2: Synthesis and characterization of several alkaloids and steroids

Course Articulation Matrix

POs / Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	2	2	2	2	3	2	2	3	3
CO2	2	1	2	1	1	1	2	3	2	2	3	2
Weighted Average	2	1	2	1.5	1.5	1.5	2	3	2	2	3	2.5

CHP SCT: 3.4. MATERIALS CHEMISTRY

Total Credits: 2 **Credit Pattern: 2:0:0** **No. of hours: 2 per week**

Course outcome:

CO1: Understand the fundamentals and importance of different types of nanomaterials, their methods of preparation and characterization by different techniques.

CO2: Basic aspects of semiconductors and superconductors, their properties and applications.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	2	2	2	2	2	2	2	3	3
CO2	2	1	2	1	1	1	2	2	2	2	3	2
Weighted Average	2	1	2	1.5	1.5	1.5	2	2	2	2	3	2.5

FOURTH SEMESTER HARD CORE PAPERS
CHI HCT: 4.1. BIOINORGANIC CHEMISTRY

Total Credits: 3 **Credit Pattern: 3:0:0** **No. of hours: 3 per week**

Course outcome:

CO1: Structural building blocks of proteins, nucleic acids and their metal ion interactions. Biological role of Na/K channel, Ca, Vit B12, and coenzymes.

CO2: Biochemical reactions of several metallo-enzymes and oxygen transport proteins.

CO3: Medicinal applications of metals and metal complexes, and also treatment of toxicity due to heavy metal ions.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	2	1	2	2	3	2	2	3	3
CO2	2	1	1	2	1	2	2	3	2	2	3	2
CO3	2	1	1	2	2	2	1	3	2	1	1	1
Weighted Average	2	1	1	2	1.33	2	1.66	3	2	1.66	2.33	2

CHO HCT: 4.2. HETEROCYCLIC AND BIOORGANIC CHEMISTRY

Total Credits: 3 **Credit Pattern: 3:0:0** **No. of hours: 3 per week**

Course Outcome:

CO1: Structure, reactivity and synthesis of several heterocyclic compounds.
CO2: Synthesis, industrial and biological importance of carbohydrates.
CO3: General synthesis of amino acids, peptides, nucleic acids and their biological significance.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	2	2	2	2	2	2	2	3	3
CO2	1	2	2	2	2	2	2	2	1	2	3	2
CO3	2	1	2	2	2	1	2	2	2	1	1	1
Weighted Average	1.66	1.33	2	2	2	1.66	2	2	1.66	1.66	2.33	2

CHP HCT: 4.3. NUCLEAR, RADIATION AND PHOTOCHEMISTRY

Total Credits: 3 **Credit Pattern: 3:0:0** **No. of hours: 3 per week**

Course outcome:

CO1: Understand the principles of photochemistry, its experimental techniques and applications.

CO2: Fundamentals of radiation chemistry, experimental methods of detection of radiation and applications of radioisotopes.

CO3: General aspects of nuclear chemistry, different types of nuclear reactions, production and separation of radioisotopes and also basic features of different types of nuclear reactors.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	1	2	2	2	2	3	2	2	3	3
CO2	2	3	1	1	2	2	2	3	2	2	3	2
CO3	2	3	1	2	2	2	2	3	2	1	1	1
Weighted Average	2	3	1	1.66	2	2	2	3	2	1.66	2.33	2

CHD HCT: 4.4. DISSERTATION WORK / PROJECT WORK

Total Credits: 3 **Credit Pattern: 0:0:3** **No. of hours: 6 per week**

Course Outcome:

CO1: Students use their knowledge of chemical reactivity to plan and execute the preparation of compounds from common starting materials.

CO2: Students use their knowledge of chemical reactivity to plan and execute the preparation of compounds from common starting materials.

CO3: Students identify, classify, organize, analyze, and draw structures of molecules.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	2	2	2	2	2	2	2	3	3
CO2	2	1	2	2	1	2	2	2	2	2	3	2
CO3	2	1	2	2	2	2	1	2	2	1	1	1
Weighted Average	2	1	2	2	1.66	2	1.66	2	2	1.66	2.33	2

SOFT CORE PAPERS

CHA SCT: 4.1. AUTOMATED AND METHODS OF CHEMICAL ANALYSIS

Total Credits: 2 **Credit Pattern: 2:0:0** **No. of hours: 2 per week**

Course outcome:

CO1: Understand various types of automated methods of analysis.

CO2: Identify activities that can be fully or partially automated.

CO3: Automated chemical analysis will be very helpful in the clinical as well as pharmaceutical field to perform the purity analysis of the sample, although the sample size is very small, expensive and fast analysis.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	2	2	2	2	2	2	2	3	3
CO2	3	2	3	2	2	1	1	2	2	2	3	2
CO3	3	2	3	2	2	2	1	1	2	1	1	1
Weighted Average	3	2	3	2	2	1.66	1.33	1.66	2	1.66	2.33	2

CHI SCT: 4.2. BIOINORGANIC PHOTOCHEMISTRY

Total Credits: 2 **Credit Pattern: 2:0:0** **No. of hours: 2 per week**

Course outcome:

CO1: Basic concepts of photochemistry and photochemical reactions.

CO2: Understand many organometallic compounds as fluorescent agents in the detection of cations, anions and toxic ions in the living system.

CO3: Theory of photodynamic, and photocatalysis.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	2	2	2	2	2	2	2	2	3	3
CO2	3	1	1	2	1	1	2	2	2	2	3	2
CO3	3	1	1	2	2	2	2	2	2	1	1	1
Weighted Average	3	1	1.33	2	1.66	1.66	2	2	2	1.66	2.33	2

CHO SCT: 4.3. MEDICINAL CHEMISTRY

Total Credits: 2 **Credit Pattern: 2:0:0** **No. of hours: 2 per week**

Course outcome:

CO1: To acquire the knowledge of biological significances of Carotenoids and vitamins.

CO2: Understand the pharmacodynamics, pharmacokinetics and chemotherapy of several drugs.

CO3: Synthesis and mechanism of drug actions of antimalarial, anticancer agents and cardiovascular drugs.

Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	1	2	2	2	2	1	2	2	3	3
CO2	2	3	1	2	2	1	2	1	2	2	3	2
CO3	2	3	1	2	2	2	2	1	2	1	1	1
Weighted Average	2	3	1	2	2	1.66	2	1	2	1.66	2.33	2

CHP SCT: 4.4. QUANTUM CHEMISTRY AND BIOSENSORS

Total Credits: 2 **Credit Pattern: 2:0:0** **No. of hours: 2 per week**

Course outcome:

CO1: Applications of quantum chemical methods in the theoretical evaluation of energies of molecules and reactions.

CO2: Development of chemical and biochemical sensors and their applications in the determination of biomolecules

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Course Articulation Matrix

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	1	2	2	2	2	2	2	2	3	3
CO2	3	3	1	2	2	1	2	2	2	2	3	2
Weighted Average	3	3	1	2	2	1.5	2	2	2	2	3	2.5

DEPARTMENT OF BIOCHEMISTRY

Course outcomes and course Articulation Matrix with tables

Programme Outcomes:

1. Develop an ability to acquire in-depth theoretical and practical knowledge of Biochemistry
2. To demonstrate an understanding of structure and metabolism of biological macromolecules and to understand the regulation and disorders of metabolic pathways.
3. The principles of bioenergetics and enzyme catalysis;
4. Understanding of metabolic pathway among prokaryotes and eukaryotes.
5. Gain proficiency in laboratory techniques in biochemistry and biological sciences like immunology, physiology, molecular biology, enzymology and biotechnology.
6. Develop an ability to understand the technical aspects of existing technologies and to provide cost efficient solutions that help in addressing the biological and medical challenges faced by mankind.
7. The practical skills are improved which help their research experience among academic or industrial R&D programs.
8. Understand the published literature by using online and offline methods; to be able to apply the scientific method to the processes of experimentation and hypothesis testing.
9. Develop an ability to translate knowledge of Biochemistry to address environmental, intellectual, societal, and ethical issues through innovative thinking and research strategies.
10. Develop an ability to put forward the scientific perception to a person/ community belonging to non-science background.
11. To inculcate skills for teaching in academic institutions for undergraduate and postgraduate students.
12. Develop confidence in taking competitive examination in the field of life sciences both in India and abroad so that they can pursue higher education.

I Semester courses

23F101 FUNDAMENTALS OF BIOCHEMISTRY

Course outcomes

1. Knowledge of Chemistry of biomolecules.
2. The fundamental principles in sequencing of DNA.
3. Importance of biomolecules in the biological system.
4. Structure and function of enzymes.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	2	2	2	3	3	3	3	3
CO2	2	2	2	1	2	2	2	3	3	3	3	3
CO3	2	2	1	2	2	2	2	3	3	3	3	3
CO4	2	1	2	2	2	2	2	3	3	3	3	3

23F102 TECHNIQUES IN BIOLOGY

Course outcomes

1. Techniques in Biology.
2. The fundamental principles in cell homogenization.
3. Importance of bio analytical techniques.
4. Significance of radiochemistry and mass spectroscopy.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	2	2	2	3	3	3	3	3
CO2	2	2	2	1	2	2	2	3	3	3	3	3
CO3	2	2	1	2	2	2	2	3	3	3	3	3
CO4	2	1	2	2	2	2	2	3	3	3	3	3

23F103 MOLECULAR CELL BIOLOGY

Course outcomes

1. Structural and functional components of a cell.
2. Role of cell cycle and its regulation.
3. Phytochemicals in cancer treatment and stems cells.
4. Receptors of signaling pathways.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

23F104 BIOORGANIC AND BIOINORGANIC CHEMISTRY

Course outcomes

1. The basics in chemical reactions.
2. Chemical bonding.
3. Stereochemistry of biomolecules.
4. Different types of heterocyclic compounds and their biological role.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

23F105 PRACTICAL 1A - Experiments in Biological techniques and Bioorganic chemistry & Tour Report (Laboratory Visit and Tour Report)
Course outcomes

1. Proficiency in laboratory techniques in biological sciences.
2. Practical applications of various chromatography techniques in separation of bioactivecompounds.
3. Estimation of different biomolecules using colorimeter.
4. Proficiency in preparing a tour report document after visiting biology-based industries and research institutes.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

23F106 PRACTICAL 1B- Experiments in Cell Biology, Genetics andBioinorganic chemistry & Seminar
Course outcomes

1. Proficiency in microscopic examination of cells.
2. Proficiency molecular cell biology experiments.
3. Proficiency in solving genetic problems.
4. Proficiency in presenting a seminar on a specific topic and discuss the concept.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

23F107 GENETICS

Course outcomes

1. Model organisms available to study genetics.
2. Mutation and mutagenesis.
3. Detailed account on transposable elements and transpositions.
4. Types of DNA recombination and DNA repair.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

23F108 MEMBRANE BIOLOGY

1. Understand properties of biological membrane, and different models ofmembranes explaining the biological function.
2. Understand membrane asymmetry and other properties using various methods.
3. Understand the complex mechanism involved in transportation ofbiomolecules across membranes.
4. Nerve transmission.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

II Semester courses

23F201 MOLECULAR BIOLOGY

Course outcomes

1. The idea about the principles behind molecular biology.
2. Understand the molecular tools and its application in basic research and appliedresearch in various fields of life sciences.
3. Understand regulation of gene expression.
4. Significance of non-coding RNA.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

23F202 ENZYMOLOGY

Course outcomes

1. Chemistry of enzyme catalysis.
2. Enzyme kinetics.
3. Regulation of enzyme activity
4. Enzyme inhibition

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

23F203 PRACTICAL 2A - Experiments in Molecular Biology and Energy Metabolism;Laboratory visits and Tour report

Course outcomes

1. Proficiency in laboratory techniques in molecular biology and energy metabolism.
2. Proficiency in the experiments to articulate the metabolic pathways.
3. Efficacy in testing the markers for health and disease.
4. Proficiency in real time functioning of the industries and institutes ofnational and international repute.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	2	3	2	3	3	3	3	3	3

23F204PRACTICAL 2B- Experiments in Enzymology and Research Paper

PresentationCourse outcomes

1. Proficiency in isolation of cell organelles and its assessment.
2. Proficiency in isolation of biomolecules and its analysis.
3. Clinical relevance of biomolecules.
4. Isolation and understanding the significance of various lipids.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	2	3	2	3	3	3	3	3	3

23F205METABOLISM OF LIPIDS

Course outcomes

1. The basics of metabolism.
2. Role of lipids in metabolism.
3. Role of lipid mediators.
4. Interactions among the metabolic enzymes.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

23F206 METABOLISM O F CARBOHYDRATES

Course outcomes

1. Chemistry of carbohydrate metabolism.
2. The fundamental thermodynamic principles in metabolism.
3. Importance of carbohydrate metabolism.
4. Role of hormones in the regulation of carbohydrate metabolism.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

23F207 ENDOCRINOLOGY

Course outcome

1. Understand the detailed structure of a cell
2. Involvement of various organelles in the synthesis of protein, amino acid and steroidhormones.
3. Understand the various endocrine organs in relation to the regulation of variousmetabolic processes.
4. Understand the hypo and hyperactivities of all the endocrine organs and theirmanifestation in various disorders.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

23F208-BIOLOGY FOR NON-BIOLOGISTS (OE)

Course outcome

1. Student would be able to work independently to use scientific methods duringbiology related investigations.
2. Use critical thinking and scientific problem-solving to make informed decisions ina real-world context.
3. Understand cellular processes in a living being.
4. Human diseases.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

23F209-NUTRITION IN HEALTH AND DISEASE (OE)

Course outcome

1. Describe how to properly design individualized eating plans by utilizing diet planningprinciples,
2. The Food Guide Pyramid, Exchange System
3. Other food guide plans that incorporate personal food preferences.
4. Students will learn about food and its relationship to health, development, and disease/disorders.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

III Semester courses 23F301

IMMUNOLOGY

Course outcomes

1. Organs, tissues, cells and molecules of the immune system
2. The immunological methods used to detect the disease
3. How the knowledge of immunology can be transferred into clinical decision-makingthrough case studies presented in class.
4. Importance of immunological techniques

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

23F302 METABOLISM OF AMINO ACIDS AND PROTEINS

Course outcomes

1. Chemistry of nucleic acid metabolism.
2. Importance of nucleic acid metabolism.
3. Mechanism of photosynthesis
4. Nitrogen metabolism

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

23F303 PRACTICAL 3A- Experiments in Immunology and amino acid metabolism.
Study tour and tour report

Course outcomes

1. Proficiency in laboratory techniques in immunology.
2. Proficiency in understand the clinical significance of different end products ofmetabolism.
3. Proficiency in laboratory techniques in amino acid metabolism
4. Proficiency in preparing a tour report document after visitingimmunology or biology-based industries and research institutes.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	2	3	2	3	3	3	3	3	3

23F304 PRACTICAL 3B- Experiments in Metabolism and Review of Literature

Course outcomes

1. Proficiency in enzyme isolation and purification techniques.
2. Proficiency in enzyme kinetics.
3. Proficiency in assessment of clinically relevant enzymes.
4. Proficiency in understanding a research article in the field of Biochemistry andrelated streams, and present as a platform presentation.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	2	3	2	3	3	3	3	3	3

23F305 METABOLISM OF NUCLEIC ACID

Course outcomes

a. Chemistry of nucleic acid metabolism. .
b. Importance of nucleic acid metabolism.
c. Mechanism of photosynthesis and nitrogen metabolism.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

23F306 RESEARCH METHODOLOGY, BIOSTATISTICS AND BIOINFORMATICS

Course outcomes

1. Basics and ethics in research. Various streams of ethical responsibilities of aresearchers at societal, environmental, legal and emotional ethics.
2. Importance of plagiarism. National and international guidelines about Intellectualproperty rights. Basics and ethics in research. Writing and analysis of research articles.
3. Knowledge of basic statistical methods to solve problems.
4. The importance of statistics in research and prepares them for a career in research. Understanding about the sequence analysis tools and also about the drug discovery.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

23F307 HUMAN PHYSIOLOGY WITH CLINICAL RELEVANCE.

Course outcomes

1. Biological processes involving membranes.
2. Importance of membranes in the biological system
3. Nutritional significance
4. Disorders related to nutrition and digestion

. **Course Articulation Matrix**

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3

23F308 INTERNSHIP

Course outcomes

1. Evaluate career goals and aspirations
2. Enhance resume and job prospects
3. Develop problem solving and critical thinking skills
4. Gain insight into company culture and operations.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	3	2	2	3	3	3	3	3	3
CO2	2	2	3	2	2	2	3	3	3	3	3	3
CO3	2	2	3	2	2	2	3	3	3	3	3	3
CO4	2	2	2	2	2	2	3	3	3	3	3	3
Weighted average	2	2	2.75	2.25	2	2	3	3	3	3	3	3
PO Attainment	1.99	1.99	2.74	2.24	1.99	1.99	2.99	2.99	2.99	2.99	2.99	2.99

IV Semester courses

23F401 RESEARCH PROJECT WORK, REPORT AND VIVA VOCE

Course outcomes

1. Enhanced laboratory skills.
2. Efficiency in identifying a research problem and plana research work.
3. Appropriate review of literature and selection ofproper laboratory methods.
4. Application and importance of statistics.
5. Make the appropriate conclusions of the research data.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	3	2	2	3	3	3	3	3	3
CO2	2	2	3	2	2	2	3	3	3	3	3	3
CO3	2	2	3	2	2	2	3	3	3	3	3	3
CO4	2	2	2	2	2	2	3	3	3	3	3	3

23F402 CLINICAL BIOCHEMISTRY

Course outcomes

1. Application of Biochemistry in the clinical diagnosis.
2. Importance of biochemical parameters in the clinical diagnosis.
3. Hepatobiliary disorders
4. GI tract disorders and diagnosis.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	3	2	2	3	3	3	3	3	3
CO2	2	2	3	2	2	2	3	3	3	3	3	3
CO3	2	2	3	2	2	2	3	3	3	3	3	3
CO4	2	2	2	2	2	2	3	3	3	3	3	3

23F403 BIOTECHNOLOGY

Course outcomes

1. Understand the principle and methodology employed in the growth ofmicroorganisms
2. Understand the various parameters affecting the growth of industrially importantmicroorganisms.
3. Understand the importance of plant and animal cell culture to producedtherapeutically important secondary metabolites
4. Understand the applications of industrial fermenters.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	3	2	2	3	3	3	3	3	3
CO2	2	2	3	2	2	2	3	3	3	3	3	3
CO3	2	2	3	2	2	2	3	3	3	3	3	3
CO4	2	2	2	2	2	2	3	3	3	3	3	3

23F404 PLANT BIOCHEMISTRY

Course outcomes

1. Biological processes involving membranes.
2. Importance of membranes in the biological system

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	3	2	2	3	3	3	3	3	3
CO2	2	2	3	2	2	2	3	3	3	3	3	3
CO3	2	2	3	2	2	2	3	3	3	3	3	3
CO4	2	2	2	2	2	2	3	3	3	3	3	3

3. Nutritional significance for plants
4. Stress physiology in plants and transportation of ions and molecules

Course Articulation Matrix

23F405 HUMAN NUTRITION

Course outcomes

1. Biological processes involving digestion, absorption of foods.
2. Importance of nutritional composition
3. Nutritional significance for infants, nursing mothers, pregnant, children and adults.
4. Understanding of nutritional disorders.

Course Articulation Matrix

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	3	2	2	3	3	3	3	3	3
CO2	2	2	3	2	2	2	3	3	3	3	3	3
CO3	2	2	3	2	2	2	3	3	3	3	3	3
CO4	2	2	2	2	2	2	3	3	3	3	3	3

DEPARTMENT OF BIOTECHNOLOGY

Course Outcomes and Course Articulation Matrix with Tables

Programme Outcomes:

1. The programme focuses on basic understanding in the diverse fields of biotechnology.
2. The programme emphasis on scientific research and its industrial applications.
3. The programme gives emphasis on skill development and research training in the field of biotechnology.
4. It enables the students to plan, design, execute, analyze, and solve industrial and research associated problems.
5. The objective of this programme is to make students competitive.
6. This programme is designed in such a way that they attain successful career in industries, research and academic institutions.
7. The programmes comprehend and integrate theoretical and practical skills.
8. The programme imparts knowledge in basic and applied disciplines of biotechnology.
9. The students are motivated to develop a research plan to solve biotechnological problems.
10. The Programme enhances the ability to design new biotechnological products
11. The students can apply knowledge of biotechnology in an integrated manner.
12. The Programme is designed in such a way that the student is trained enough to take employment in diverse areas of biotechnology as well as for further higher studies.

I Semester courses

Molecular Cell Biology (FCHC)

Course Outcomes

1. The structures and purposes of basic components of prokaryotic and eukaryotic cells, especially macromolecules, membranes, and organelles.
2. Cell cycle and cellular processes.
3. Concept of cancer biology and signal transduction.
4. Phytochemicals in cancer treatment and stems cells.

Course Articulation Matrix

SEMESTER I												
Course Name : MOLECULAR CELL BIOLOGY (FCHC)												
PO / CO	PO-1	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO-XII
CO1	2	2	2	3	2	3	3	3	3	3	3	3
CO2	2	2	2	3	2	3	2	2	2	2	3	3
CO3	2	2	2	3	2	3	2	2	2	2	3	3
CO4	2	2	2	3	2	3	2	2	2	2	3	3
Weighted Average	**2**	**2**	**2**	**3**	**2**	**3**	**2.25**	**2.25**	**2.25**	**2.25**	**3**	**3**

FUNDAMENTALSOF BIOCHEMISTRY (FCHC): 22D102

Course Outcome:

1. The basics of biomolecules.
2. Functions of biomolecules in the biological system.
3. Interactions among the biomolecules in the nature.
4. The fundamental principles in sequencing of DNA.

Course Articulation Matrix

SEMESTER I												
Course Name : FUNDAMENTALSOF BIOCHEMISTRY(FCHC)												
PO / CO	**PO-1**	**PO-II**	**PO-111**	**PO-IV**	**PO-V**	**PO-VI**	**PO-VII**	**PO-VIII**	**PO-XI**	**PO-X**	**PO-XI**	**PO-XII**
CO1	3	2	2	2	2	2	2	2	2	2	3	3
CO2	3	2	2	2	2	2	2	3	2	2	3	3
CO3	3	2	2	2	2	2	2	2	3	3	3	3
CO4	3	2	2	2	2	2	2	2	3	3	3	3
Weighted Average	**3**	**2**	**2**	**2**	**2**	**2**	**2**	**2.25**	**2.5**	**2.5**	**3**	**3**

TECHNIQUES IN BIOLOGY (FCHC)

Course Outcome:

1. This paper is designed to give a brief introduction to most of the techniques used in the field of biological analyses.
2. Nevertheless, the topics in this paper are to be taught compendiously.
3. The fundamental principles in cell homogenization.
4. Importance of bioanalytical techniques.

Course Articulation Matrix

SEMESTER I												
Course Name : TECHNIQUES IN BIOLOGY (FCHC)												
PO / CO	**PO-1**	**PO-II**	**PO-111**	**PO-IV**	**PO-V**	**PO-VI**	**PO-VII**	**PO-VIII**	**PO-XI**	**PO-X**	**PO-XI**	**PO-XII**
CO1	3	3	2	3	2	3	2	2	2	2	3	3
CO2	3	3	2	3	2	3	2	2	2	2	3	3
CO3	3	3	2	3	2	3	2	2	2	2	3	3
CO4	3	3	2	3	2	3	2	2	2	2	3	3
Weighted Average	**3**	**3**	**2**	**3**	**2**	**3**	**2**	**2**	**2**	**2**	**3**	**3**

PRACTICAL- I (HC)

(Molecular Cell Biology, Fundamentals of Biochemistry, Techniques in Biology and Genetics / Microbiology/Food and Environmental Biotechnology)

Course Outcome:

1. Understanding the cell organelle, chromosome structure and mutation analysis.

2. Methodology applied to prepare buffers and solutions.

3. Hands on training in chromatographic techniques.

4. Isolation, enumeration and biochemical characterization of microbes.

5. Functional foods and environmental protection.

Course Articulation Matrix

SEMESTER I												
Course Name : PRACTICAL- I (HC) (Molecular Cell Biology, Fundamentals of Biochemistry, Techniques in Biology and Genetics/ Microbiology/Food and Environmental Biotechnology)												
PO / CO	**PO-1**	**PO-II**	**PO-111**	**PO-IV**	**PO-V**	**PO-VI**	**PO-VII**	**PO-VIII**	**PO-XI**	**PO-X**	**PO-XI**	**PO-XII**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**

MICROBIOLOGY (FCSC)

Course Outcome:

1. The characteristics of microbes, their taxonomy and diversity.
2. The growth of microbes and their control.
3. The relationship between microbes and environment.
4. The beneficial and harmful effects of microorganisms.

Course Articulation Matrix

SEMESTER I												
Course Name : MICROBIOLOGY (FCSC)												
PO / CO	PO-I	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO-XII
CO1	3	3	2	3	2	3	3	3	2	3	2	3
CO2	3	3	2	3	2	3	3	3	2	3	2	3
CO3	3	3	2	3	2	3	3	3	2	3	2	3
CO4	3	3	2	3	2	3	3	3	2	3	2	3
Weighted Average	**3**	**3**	**2**	**2**	**2**	**3**	**3**	**3**	**2**	**3**	**2**	**3**

FOOD AND ENVIRONMENTAL BIOTECHNOLOGY (SC)

Course Outcome:

1. The knowledge about fermentation and fermented products and nutrition.
2. The functional foods and genetically modified foods.
3. The detailed account of Environment and bioremediation of pollutants.
4. The knowledge of phytoremediation.

Course Articulation Matrix

SEMESTER I												
Course Name : FOOD AND ENVIRONMENTAL BIOTECHNOLOGY (SC)												
PO / CO	PO-I	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VIII	PO-VIII	PO-IX	PO-X	PO-X1	PO-XII
CO1	3	3	2	3	2	3	3	3	2	3	2	3
CO2	3	3	2	3	2	3	3	3	2	3	2	3
CO3	3	3	2	3	2	3	3	3	2	3	2	3
CO4	3	3	2	3	2	3	3	3	2	3	2	3
Weighted Average	**3**	**3**	**2**	**3**	**2**	**3**	**3**	**3**	**2**	**3**	**2**	**3**

II Semester courses

MOLECULAR BIOLOGY (FCHC)

Course outcome:

1. To understand biological activities and metabolism at DNA and protein level
2. The course gives an in-depth insight into the molecular aspects of life - the central dogma.
3. It explains molecular aspects of genes and its regulation- genome- gene expressions heredity- recombination- protein synthesis- molecular basis of diseases- mutations genetic analysis etc.
4. Understand the molecular tools and its application in basic research and applied research in various fields of life sciences.

Course Articulation Matrix

SEMESTER II												
Course Name : MOLECULAR BIOLOGY(FCHC)												
PO / CO	PO-1	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO-XII
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

GENETIC ENGINEERING (FCHC)

Course Outcome:

1. To understand cloning and expression vectors.

2. Methods involved in gene manipulation and techniques of gene analysis.

3. The vast knowledge of gene editing.

4. The knowledge about the Ex vivo and in vivo gene therapy

Course Articulation Matrix

SEMESTER II												
Course Name : GENETIC ENGINEERING (FCHC)												
PO / CO	**PO-1**	**PO-II**	**PO-III**	**PO-IV**	**PO-V**	**PO-VI**	**PO-VII**	**PO-VIII**	**PO-IX**	**PO-X**	**PO-XI**	**PO-XII**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**

Practical-II (HC)

(Molecular Biology, Genetic Engineering and Molecular Diagnostics / Molecular Plant Pathology /Bioprocess Technology)

Course Outcome:

1. Performing the methodology applied to extract DNA & RNA from different sources.
2. Determining the purity, concentration and applying it for different digests and ligates.
3. Isolating the plasmid and inducing the gene expression.
4. Producing the recombinant protein.
5. Analysing the molecular diagnosis of diseases using PCR and ELISA.

Course Articulation Matrix

SEMESTER II												
Course Name : PRACTICAL – II (HC) (Molecular Biology, Genetic Engineering and Molecular Diagnostics / Molecular Plant Pathology /Bioprocess Technology)												
PO / CO	PO-1	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO-XII
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

MOLECULAR DIAGNOSTICS (FCSC)

Course Outcome:

1. The course focuses on learning and understanding how the various molecular techniques that were studied can be developed and utilized in diagnosis.
2. The course explains common analytical techniques and molecular techniques related to the development and use of diagnostics.
3. Students learn about the clinical applications of molecular diagnostic in patients with infectious disease.
4. They can find their future focus in biotechnology companies developing and marketing Diagnostic kits.

Course Articulation Matrix

SEMESTER II												
Course Name : MOLECULAR DIAGNOSTICS (FCSC)												
PO / CO	PO-1	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO-XII
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**

MOLECULAR PLANT PATHOLOGY (SC)

Course Outcome:

1. The concepts of plant pathology
2. The host pathogen interaction.
3. The genetics of plant diseases and resistance.
4. Application of molecular biology to conventional disease control strategies.

Course Articulation Matrix

SEMESTER II												
Course Name : MOLECULAR PLANT PATHOLOGY (SC)												
PO / CO	PO-1	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO-XII
CO1	3	3	2	3	2	3	3	3	2	3	2	3
CO2	3	3	2	3	2	3	3	3	2	3	2	3
CO3	3	3	2	3	2	3	3	3	2	3	2	3
CO 4	3	3	2	3	2	3	3	3	2	3	2	3
Weighted Average	**3**	**3**	**2**	**3**	**2**	**3**	**3**	**3**	**2**	**3**	**2**	**3**

III Semester courses

PLANT BIOTECHNOLOGY(HC)

Course Outcome:

1. The goal of this course is to introduce biotechnology methods in plants.
2. Handling of classical and modern plant biotechnology processes.
3. And understanding breeding of healthy plants for improved characteristics and plants for biomolecule production.
4. The application in pharmaceutical and food industry, in agriculture and in ecology.

Course Articulation Matrix

SEMESTER III												
Course Name : PLANT BIOTECHNOLOGY (HC)												
PO / CO	PO- 1	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO-XII
CO1	3	3	3	3	3	2	2	3	3	3	3	3
O2	3	3	3	3	3	2	2	3	3	3	3	3
CO3	3	3	3	3	3	2	2	3	3	3	3	3
CO4	3	3	3	3	3	2	2	3	3	3	3	3
Weighted Average	3	3	3	3	3	2	2	3	3	3	3	3

ANIMAL BIOTECHNOLOGY (HC)

Course Outcome:

1. Culturing of animal cells and steps in production of transgenic animals
2. Techniques in animal cell culture
3. Cloning of animals
4. Approaches for tissue engineering

Course Articulation Matrix

SEMESTER III												
Course Name : ANIMAL BIOTECHNOLOGY(HC)												
PO / CO	PO-1	PO-II	PO-111	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-XI	PO-X	PO-XI	PO-XII
CO1	3	3	3	3	3	2	2	3	3	3	3	3
CO2	3	3	3	3	3	2	2	3	3	3	3	3
CO3	3	3	3	3	3	2	2	3	3	3	3	3
CO4	3	3	3	3	3	2	2	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**2**	**2**	**3**	**3**	**3**	**3**	**3**

IMMUNOLOGY (FCHC)

Course Outcome:

1. Role of immune system in maintaining health
2. Cellular and molecular basis of immune responses
3. How immune responses are triggered and regulated
4. How the knowledge of immunology can be transferred into clinical decision-making through case studies presented in class.

Course Articulation Matrix

SEMESTER III												
Course Name : IMMUNOLOGY (FCHC)												
PO / CO	PO- 1	PO- II	PO-III	PO-IV	PO- V	PO- VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO- XII
CO1	3	3	3	3	3	2	2	3	3	3	3	3
CO2	3	3	3	3	3	2	2	3	3	3	3	3
CO3	3	3	3	3	3	2	2	3	3	3	3	3
CO 4	3	3	3	3	3	2	2	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**2**	**2**	**3**	**3**	**3**	**3**	**3**

PRACTICAL- III (HC)

(Plant Biotechnology, Immunology and Animal Biotechnology/ Natural Products & Drug Discovery/ Genomics & Proteomics)

Course Outcome:

1. Hands on training in plant tissue culture
2. Performing the production of synthetic seeds.
3. Performing animal cell culture techniques.
4. Performing immunotechniques.
5. Drug discovery, isolation of genes and protein purification

Course Articulation Matrix

SEMESTER III												
Course Name : PRACTICAL – III (HC) (Plant Biotechnology, Immunology and Animal Biotechnology/ Natural Products & Drug Discovery/ Genomics & Proteomics)												
PO / CO	PO-1	PO-II	PO-III	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-IX	PO-X	PO-XI	PO-XII
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

NATURAL PRODUCTS AND DRUG DISCOVERY (SC)

Course Outcome:

1. The prospects of Natural products in 21st Century.
2. The use of different natural sources for discovery of drug.
3. To perform molecular modelling.
4. Regulatory guidelines for preclinical studies

Course Articulation Matrix

SEMESTER III												
Course Name : NATURAL PRODUCTS AND DRUG DISCOVERY (SC)												
PO / CO	PO-1	PO-II	PO-111	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-XI	PO-X	PO-XI	PO-XII
CO1	3	3	3	3	3	2	2	3	3	3	3	3
CO2	3	3	3	3	3	2	2	3	3	3	3	3
CO3	3	3	3	3	3	2	2	3	3	3	3	3
CO4	3	3	3	3	3	2	2	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**2**	**2**	**3**	**3**	**3**	**3**	**3**

BIOSTATISTICS AND BIOINFORMATICS (SC)

Course Outcome:

1. Knowledge of basic statistical methods to solve problems.
2. Students are taught to operate various statistical software packages.
3. The in-depth knowledge about the bioinformatics.
4. Understanding about the sequence analysis tools and also about the drug discovery.

Course Articulation Matrix

SEMESTER III												
Course Name : BIOSTATISTICS AND BIOINFORMATICS (SC)												
PO / CO	PO-1	PO-II	PO-111	PO-IV	PO-V	PO-VI	PO-VII	PO-VIII	PO-XI	PO-X	PO-XI	PO-XII
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**

IV Semester Courses

PROJECT WORK (HC)Course Outcome:

1. Review research papers for find out gap in the literature.

2. Understand designing experiments based on the research problem.

3. Understand compiling and analyzing of data.

4. Able to write a comprehensive project report/review.

Course Articulation Matrix

SEMESTER IV												
Course Name : _PROJECT WORK (HC)												
PO / CO	**PO-1**	**PO-II**	**PO-III**	**PO-IV**	**PO-V**	**PO-VI**	**PO-VII**	**PO-VIII**	**PO-IX**	**PO-X**	**PO-XI**	**PO-XII**
CO1	2	2	3	3	2	2	3	3	3	3	3	3
CO2	2	2	3	2	2	2	3	3	3	3	3	3
CO3	2	2	3	2	2	2	3	3	3	3	3	3
CO4	2	2	2	2	2	2	3	3	3	3	3	3
Weighted Average	**2**	**2**	**2.75**	**2.25**	**2**	**2**	**3**	**3**	**3**	**3**	**3**	**3**

DEPARTMENT OF MICROBIOLOGY

Course outcomes and course Articulation Matrix with tables

Programme Outcomes:

1. Students will have a strong foundation in the fundamentals and applications of current theoretical and practical Microbiology in Microbial culture, Identification, Biochemical analysis and Biological activities from microbial metabolites
2. Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems.
3. Students will be able to design and carry out scientific experiments and accurately record and analyze the results of the experiments.
4. Students will be able to explore new areas of research in both microbiology and other fundamental life science fields such as Biochemistry and Biotechnology.
5. Students will understand the central role of microbiology to our society which includes understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.
6. Createawarenessandsenseofresponsibilitiestowardsenvironmentandapply knowledgetosolvethe issues related to health and environmental concern.
7. Applyknowledgetobuildupsmallscaleindustryfordevelopingendogenousproduct
8. Apply various aspects of microbiology in natural products isolations, pharmaceuticals, dyes, textiles, polymers, petroleum products, forensic etc. And also, to develop interdisciplinary approach of the subject.
9. Thecoursecurriculumincorporatesbasicsandadvancedtraininginordertomak eastudentcapable of expressing the subject through technical writing as well as through oral presentation.
10. Provide an opportunity to act as team player by contributing in laboratory, field-based situation and industry.
11. Use modern techniques, decent equipment's and analytical software's.
12. A post-graduation in Microbiology provides the opportunities in educational sector, pharmaceutical companies and chemical industries.

HARDCORE: BACTERIOLOGY

Course outcome:

1. The structure of bacteria and its identification
2. The different agents to inhibit bacteria
3. The concept and working principles of microscopes
4. Classification and salient features of different groups of bacteria

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	2	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	2	3	3	2	3	3
Weighted average	3	3	2.75	3	3	3	2.75	3	3	2.75	3	3

Hardcore: Virology

Course outcome:

1. Structure and functioning of viruses
2. Infectious cycle and replication pattern
3. Viruses as tool for vaccination
4. Host and virus specific responses

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

TECHNIQUESINBIOLOGY(FCHC)

Course outcome:

1. This paper is designed to give a brief introduction to most of the techniques used in the field of biological analyses
2. Nevertheless, the topics in this paper are to be taught compendiously.
3. Techniques in Biology
4. The fundamental principles in cell homogenization

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	2	3	3	3	3	3	3	3
CO4	3	3	3	3	2	3	3	3	2	3	3	3
Weighted Average	3	3	3	3	2.5	3	3	3	2.75	3	3	3

HARDCORE: MOLECULARCELLBIOLOGY(FCHC)

Course outcome:

1. The Cellular organization.
2. Study of phytochemicals in cancer biology.
3. Signaling transduction in cells.
4. Structure and function of cell.

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	2	3	3	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	2	3	3	3	3	3	3
Weighted Average	3	3	3	3	2.75	2.5	3	3	3	3	3	3

SOFTCORE: ENVIRONMENTAL MICROBIOLOGY

Course outcome:

1. The evolution of life, microorganisms and soil interaction
2. Adaptation of microorganisms
3. The ecological succession of microorganisms and its adaptation
4. Bioremediation concept of microorganisms

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	2	3	3	3	3	3	3
CO3	3	3	2	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	2	3	3	3
Weighted Average	3	3	2.75	3	3	2.75	3	3	2.75	3	3	3

SOFTCORE: FUNDAMENTALSOFBIOCHEMISTRY(FCHC)

Course outcome:

1. The basics of biochemistry.
2. Lipids and metabolism
3. Importance of biochemistry.
4. Application of biochemistry knowledge in the society.

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	2	3	3	3	3	3	3	3	3
CO2	3	3	3	2	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	2	3	3	3
Weighted Average	3	3	3	2.5	3	2.75	3	3	2.75	3	3	3

PRACTICALIA: (Techniques in Biology &Bacteriology &Virology)

Course outcome:

1. Structure and functioning of viruses
2. Infectious cycle and replication pattern
3. The fundamental principles in cell homogenization
4. The concept and working principles of microscopes

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	2	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	2.75	3	3	3	3	3	3	3	3

PRACTICALIB:(Molecular Cell Biology &Environmental Microbiology)

Course outcome

1. Phytochemical role in cellular process and cancer biology
2. Importance of growth factors and cellular signalling.
3. Importance of bioanalytical techniques
4. Techniques in Biology

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	2	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	2.75	3	3	3	3	3	3	3	3	3

IISEMESTER

HARDCORE: MOLECULAR BIOLOGY (FCHC)

Course Outcome:

1. To understand biological activities and metabolism at DNA and protein level
2. The course gives an in-depth insight into the molecular aspects of life-the central dogma.
3. It explains molecular aspects of genes and its regulation- genome- gene expressions heredity- recombination- protein synthesis- molecular basis of diseases-mutations genetic analysis etc.
4. Th student will get an idea about the principles behind molecular biology

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	2	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	2	3	3	3	3
Weighted Average	3	3	2.75	3	3	3	3	2.75	3	3	3	3

HARDCORE: GENETIC ENGINEERING (FCHC)

Course outcome:

1. The basics of Genetic engineering.
2. Basic principles of gene cloning and gene products.
3. Applied aspects of Genetic engineering
4. Importance of Recombinant DNA Technology.

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	2	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	2.75	3	3	3	3	3	3	3	3	3	3

SOFT CORE: MICROBIAL PHYSIOLOGY

Course Outcome:

1. This course deals with characteristics, properties and biological significance of the biomolecules of life.
2. Indepthknowledgeoftheenergeticandregulationofdifferentmetabolicprocesses In microorganisms.
3. The student develops understanding of the laws of thermodynamics, concepts of entropy, enthalpy and free energy changes and their application to biological systems and various biochemical studies and reactions.
4. Conceptual knowledge of aerobic and anaerobic respiration and various intermediary mechanisms involved, oxidative phosphorylation.

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	2	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	2	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	2.75	2.75	3	3	3	3	3	3	3	3	3

-

SOFT CORE: MOLECULAR DIAGNOSTICS (FCSC)

Course outcome:

1. The course focuses on learning and understanding how the various molecular techniques that were studied can be developed and utilized in diagnosis.
2. The course explains common analytical techniques and molecular techniques related to the development and use of diagnostics.
3. Students learn about the clinical applications of molecular diagnostic in patients with infectious disease.
4. The student will get an idea about the concept of molecular diagnosis and underpinning the successful application of gene therapy or biologic response modifiers as well they can find their future focus in biotechnology companies developing and marketing Diagnostic kits.

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

SOFTCORE: GENETICS

Total Credit:03 **TotalHours:48hours**

Course outcome:

1. The basics of genetic transmission
2. Study on microbial genetic factors and mutation.
3. Study on genetic basis of sex determination and transposable elements
4. Mendel's Experiments and extranuclear inheritance.

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	2	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	2.75	3	3	3	3	3	3	3

PRACTICALS IIA: (Molecular Biology & Genetic Engineering)

Course outcome:

1. Make students to understand the basic molecular tools and its application in basic research and applied research in various fields of life sciences.
2. The fundamental cloning vectors.
3. Preparation of probes and its application in scientific fields
4. Thecoursegivesanin-depthinsightintothemolecularaspectsoflife-thecentral dogma

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

PRACTICALS IIB: (Microbial Physiology & Industrial Microbiology)

Course outcome:

1. Overview of major biomolecules: Classification, structure, function of carbohydrates, lipids, proteins, aminoacids, nucleic acids.
2. Discuss the biosynthesis and the degradation pathways involved in the physiology of microbes.
3. Conceptual knowledge of properties, structure, function of enzymes, enzyme kinetics and their regulation, enzyme engineering, Application of enzymes in large scale
4. This course deals with characteristics, properties and biological significance of the biomolecules of life.

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

OPEN ELECTIVE MICROBES IN DAY TO DAY LIFE

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	2	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	2.75	3	3	3	3	3	3	3	3	3	3

IIISEMESTER

HARDCORE: MEDICAL MICROBIOLOGY

Course outcome:

1. Basis of microbial infection
2. Mode of action of drugs on microbes
3. Diagnosis of microbial infectious diseases
4. Transducing signals in host

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

IMMUNOLOGY(FCHC)

Course outcome:

1. Role of immune system in maintaining health
2. Cellular and molecular basis of immune responses
3. How immune responses are triggered and regulated
4. Organs, tissues, cells and molecules of the immune system

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	2.75	3	3	3	3	3	3

SOFTCORE: FOOD MICROBIOLOGY

Course outcome:

1. Basis of food borne microbes
2. Nutritive value of foods/Nutraceuticals
3. Food born pathogen detection
4. Expertise in detecting food poisoning

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	2	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	2.75	3	3	3	3	3	3	3

SOFTCORE: AGRICULTURAL MICROBIOLOGY

Course outcome:

1. This paper of microbiology and biochemistry of soil s designed with the objective to provide general introduction of soil and in-depth information on soil microbial diversity and the role of microorganisms in biogeochemical cycling of elements like C, N, P and trace elements and soil fertility.
2. The importance of physical, chemical and biological properties of soil.
3. Role of microorganisms in biogeochemical cycling.
4. Microbiology and physiology of degradation of native and organic matter and Nitrogen fixation.

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	2	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	2.75	3	3	3	3	3	3	3	3

SOFTCORE: MYCOLOGY

Course outcome:

1. Basis of fungal taxonomy
2. Fungal characteristics and its economic importance
3. Expertise in detecting fungal identification
4. Interaction of fungus with different commodity

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	2	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	2.75	3	3	3	3	3	3	3	3

SOFT CORE: GENOMICS AND PROTEOMICS

Course outcome:

1. The concepts of genome, genome sequencing and genome mapping
2. The knowledge about structural and functional proteomics
3. Next generation sequencing, Human Genome Project.
4. Understanding about the mass spectra analysis.

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	2	3	3	3	3	3	3
CO2	3	3	3	3	3	2	3	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3
CO4	3	3	3	3	3	2	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	2	3	3	3	3	3	3

PRACTICALS IIIA: (Immunology & Medical Microbiology & Food Microbiology)

Course outcome:

1. The immunological methods used to detect the disease
2. How the knowledge of immunology can be transferred into clinical decision-making through case studies prese class
3. Interaction of microbes with different food commodity the role of molecular markers in comparative genomics

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

PRACTICALS IIIB: (Mycology and Agricultural Microbiology)

Course outcome:

1. Isolation of slime molds.
2. Isolation of aquatic fungi.
3. Isolation of soil fungi.
4. Isolation of fungi from air.
5. Isolation of fungi from cereals and cereal based products.

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

IVSEMESTER

SOFTCORE: INDUSTRIAL MICROBIOLOGY

Course outcome:

1. Industrial microbiology &fermentation contains improved biochemical or physiological fermentation are mainly carried out by fungi and bacteria on large scale to produce commercial products.
2. The main objective of industrial fermentation is to produce highest quality and quantity of particles produce by combining.
3. Microbes involved in fermentation.
4. The basics offer mentation technology.

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	2	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	2.75	3	3	3	3	3	3	3	3

HARDCORE: Research Project Work, Report and Viva Voce

Course outcome:

1. Students will able to choose an appropriate topic for study and will able to clearly formulate and state research problems
2. Students will be able tocomplete the relevant literature and frame hypothesis for research
3. Students will able to plan research design
4. Student will able compile relevant data, interpret and analyze it and test the hypothesis where ever applicable
5. Students will able to defend his/her work in front of a panel of examiners

Course Articulation Matrix

CO/PO												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	2	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	2.75	3	3	3	3	3	3	3	3	3

DEPARTMENT OF SOCIAL WORK

Programme Outcomes, Course Outcome & Course Articulation Matrix with Tables

PROGRAMME OUTCOME

1. The Social Work trainees shall apply the foundation knowledge, skills, values and ethics of social work practice in the assessment and treatment of individuals, families, groups, organizations, and communities and be able to make a career in social work practice.
2. Demonstrate an understanding and appreciation for human diversity, to engage in non-discriminatory culturally sensitive practice that seeks social and economic justice for clients, provide service to those who are in need of it.
3. Recognize him/her self as a Professional Social Worker.
4. Facilitate inter-disciplinary collaboration for better understanding of human problems, services andissues related to human development.
5. Develop a professional identity as a social worker by applying professional values and ethics to socialwork practice.
6. Link theory with practice in every sphere of human service interventions.
7. To develop requisite knowledge, skills and values in working with people.
8. Establish an interaction between social scientists, activists, policy makers and planners
9. Promotes among learners a sense of responsibility and commitment to work with different sections ofpeople and especially of the vulnerable sections of the society
10. Promotes opportunities and to create awareness for personal growth.
11. Develops creative thinking and ability to apply theoretical knowledge in practice of social work
12. Ability to identify ways that they can maximize the strengths of the client context to design andpromote effective programs for clients

I SEMESTER

SOCIAL WORK - HISTORY AND IDEOLOGIES

Credit pattern: L:T:P::2:1:0 Total Credits: 3

Course Outcomes (COs):

CO 1: To understand history and evolution of social Work profession, both in India and the West.

CO2: To develop insights into the origin and Development of Ideologies and Approaches to socialChang

CO 3: To develop Skills to understand contemporary reality in its historical context.

Course Articulation Matrix - Social Work – History and Ideologies HC												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	2	3	3	3	2	3	3	3	3	2
CO3	2	3	3	3	3	3	3	3	3	2	3	3
Weighted Average	2.7	3	2.7	3	3	3	2.7	3	3	2.7	3	2.7

SOCIETY AND DYNAMICS OF HUMAN BEHAVIOUR

Credit pattern: L:T:P::2:1:0 Total Credits: 3

Course Outcomes (COs)

CO 1: Acquaint themselves with the basic concepts of Sociology like society, community, association, culture, social change, social stratification etc.

CO 2: Know the basic social institutions like family, marriage, kinship in a scientific way

CO 3: Explain social change and the factors affecting social change. Realize the importance ofcultural lag to understand social change

CO 4: To understand psychological concepts and its relevance to Social Work

Course Articulation Matrix - Course name: Society and Dynamics of Human Behavior (HC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	2	3	3	3	3	3	3	3	2
CO3	2	3	3	3	3	2	3	2	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
WeightedAverage	2.7	3	3	2.7	3	2. 7	3	2.7	3	3	3	2.7

WORK WITH INDIVIDUALS AND FAMILIES

Credit pattern: L:T:P::2:1:0 Total Credits: 3

Course Outcomes (COs):

CO 1: To understand the individual, family and their problems and the social contextual factors affectingthem.
CO 2: To understand Social Casework as a method of Social Work practice.
CO 3: To develop an understanding of application of case works in diverse settings.

Course Articulation Matrix - Work with Individuals and Families (HC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

Work with Groups

Credit pattern: L:T:P::2:1:0 Total Credits: 3

Course Outcomes (COs):

CO 1: Ability to Understand the nature and types of groups.

CO 2: Understand Social Group Work as a method of Social Work practice

CO 3: Know the basic concepts, tools, techniques, processes and Skills of working with groups.

Course Articulation Matrix - Work with Groups (HC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO 11**	**PO 12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

WORK WITH COMMUNITIES

Credit pattern: L:T:P::2:1:0 Total Credits: 3

Course Outcomes (COs):

CO 1: Understand the fundamental concepts and components of community, community organization and social action

CO 2: Understand the models of community organization and social action

CO 3: Understand the relationship of community organization and soScial action with other methods of social work.

CO 4: Understand various social movements in India

Course Articulation Matrix - Work with Communities (HC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

SOCIAL WORK PRACTICUM - I

Credit pattern: L:T:P::0:0:3 Total Credits: 3

Course Outcomes (COs):

CO 1: Work in agencies working in different types of areas of Social Work practice

CO 2: Develop work plan in consultation with agency supervisor

CO 3: Develop capacity for observation and analysis of social realities

CO 4: Practice the methods of working with individuals and groups

CO 5: Develop understanding of the needs, problems and Programmes for different target groups

Course Articulation Matrix - Social Work Practicum – I (HC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

II SEMESTER

MANAGEMENT OF DEVELOPMENTALANDWELFARE SERVICES

Credit pattern: L:T:P::2:1:0 Total Credits: 3

Course Outcomes (COs):

CO 1: Understand the administration of welfare organizations and civil society organization / NonGovernment organization.

CO 2: Understand the scope for social work in welfare organizations and NGO's

CO 3: Understand the scope for social work in welfare organizations and NGO's

CO 4: Develop knowledge about registration procedure of organization

Course Articulation Matrix - Management of Developmental and Welfare Services (HC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	2	3	3	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	2
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	2.7	3	3	3	3	2.7

SOCIAL WORK RESEARCH AND STATISTICS

Credit pattern: L:T:P::2:1:0 Total Credits: 3

Course Outcomes (COs):

CO 1: Gain understanding of nature and relevance of social science research and its application inthe study of social phenomena.

CO 2: Learn steps and process of formulation of research design and carry out the same.

CO 3: Learn method of conducting a review of literature.

CO 4: Develop familiarity with qualitative and quantitative research methods

CO 5: Learn how to prepare tools for collection of data

CO 6: Learn process of data collection, organization, presentation, analysis and report Writing.

Course Articulation Matrix - Social Work Research and Statistics (HC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

SOCIAL WORK PRACTICUM - II:

Credit pattern: L:T:P::0:0:3 Total Credits: 3

Course Outcomes

CO 1: Provides an opportunity to experience rural life, analyze rural dynamics, and observe the functioning of local self-government and voluntary organisations

CO 2: Aids peer participation in planning for activities for own group and those for local people

CO 3: Helps develop skills to carry out, evaluate, and report the experience.

Course Articulation Matrix - Social Work Practicum – II (Social Work Camp and Summer Placement)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	3	3	3	3	3	3	3	3	3	3	3
CO2	2	2	3	2	3	3	2	2	2	2	2	3
CO3	2	3	3	3	2	3	3	2	3	3	3	2
Weighted Average	2	2. 7	3	2. 7	2. 7	3	2.7	2. 3	2. 7	2.7	2.7	2.7

SOCIAL WORK PRACTICUM – III

Credit pattern: L:T:P::0:0:3 Total Credits: 3

Course Outcomes (COs):

CO 1: Develop work plan in consultation with agency supervisor

CO 2: Continue practicing the methods of working with individuals and groups

CO 3: Identify and utilize human, material and financial resources

CO 4: Develop process-oriented skills of working with individuals, families and groups with special reference to social support system

Course Articulation Matrix - Social Work Practicum – III												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	2	3	3	3	3	3	3	3	3
CO2	3	3	3	2	3	2	3	3	3	2	3	3
CO3	3	3	3	2	3	3	3	3	3	2	3	3
Weighted Average	3	3	3	2	3	2.7	3	3	3	2.3	3	3

COMMUNICATION AND COUNSELING

Credit pattern: L:T:P::2:1:0 Total Credits: 3

Course Outcomes (COs):

CO 1: Provides an opportunity to experience rural life, analyze rural dynamics, and observe the functioning of local self-government andvoluntary organizations

CO 2: Aids peer participation in planning for activities for own group and those for local people

CO 3: Helps develop skills to carry out, evaluate, and report the experience.

Course Articulation Matrix -Communication and Counseling (SC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	2	2	2	2	2	2	2	2	2	2	2
CO2	2	2	2	2	2	2	2	2	2	2	2	2
CO3	2	2	2	2	2	2	2	2	2	2	2	2
CO4	2	2	2	2	2	2	2	2	2	2	2	2
Weighted Average	2	2	2	2	2	2	2	2	2	2	2	2

GANDHIAN APPROACH TO WELFAREANDDEVELOPMENT

Credit pattern: L:T:P::2:1:0 Total Credits: 3

Course Outcomes (COs):

CO 1: Understand the applicability of Gandhian methods in the contemporary political, economic and social demines.

CO 2: Perceive, understand and appreciate the socially relevant ideals of Gandhi.

CO 3: analyze the simple living, struggle for truth and principle of nonviolence practiced and propagated by Mahatma Gandhi.

Course Articulation Matrix - Gandhian Approach to Welfare and Development (SC)												
CO/PO	**PO1**	**PO2**	**PO 3**	**PO4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	2	2	2	2	2	2	2	2	2	2	2
CO2	2	2	2	2	2	2	2	2	2	2	2	2
CO3	2	2	2	2	2	2	2	2	2	2	2	2
Weighted Average	2	2	2	2	2	2	2	2	2	2	2	2

PERSONAL AND PROFESSIONAL GROWTH.

Credit pattern: L:T:P::2:1:0 Total Credits: 3

Course Outcomes (COs):

CO 1: Deep and well-informed awareness of their own skills, knowledge, and professional attributes interests, values and personality, and how these can be deployed in a variety of contexts. An ability to articulate their learning and development, critically

CO 2: Reflect on experiences (academic, extra-curricular, work and life), identify strengths, and to act on areas requiring further development.

CO 3: A critical awareness of personal capabilities, strengths and potential, and be able to communicate these constructively and realistically for a variety of contexts.

Course Articulation Matrix - Personal and Professional Growth (SC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	2	3	3	2	2	3	2	3	3	2	2
CO3	3	2	3	3	3	3	2	2	3	2	3	3
Weighted Average	3	2.3	3	3	2. 7	2.7	2.7	2.3	3	2.7	2.7	2.7

POPULATION AND ENVIRONMENT

Credit pattern: L:T:P::2:1:0 Total Credits: 3

Course Outcomes (COs):

CO 1: Understand the concept of population

CO 2: Develop skills for planning and implementing Family Planning and welfare programmes.

CO 3: Study role of social workers in family welfare programmes and Environment Change.

Course Articulation Matrix - Population and Environment (SC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	2	2	2	2	2	2	2	2	2	2	2
CO2	2	2	2	2	2	2	2	2	2	2	2	2
CO3	2	2	2	2	2	2	2	2	2	2	2	2
Weighted Average	2	2	2	2	2	2	2	2	2	2	2	2

SOCIAL WORK PRACTICE WITH CHILDREN

Credit pattern: L:T:P::3:1:0 Total Credits: 4

Course Outcomes (COs):

CO 1: Able to deliver services for children in appropriate manner.

CO 2: Students will be able to design, implement and evaluate a variety of strategies to provide services for Children

Course Articulation Matrix - Social Work Practice with Children (OE)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	2	2	2	2	2	2	2	2	2	2	2
CO2	2	2	2	2	2	2	2	2	2	2	2	2
Weighted Average	2	2	2	2	2	2	2	2	2	2	2	2

SCIENCE OF CRIME, PENOLOGY AND SOCIAL WORKPRACTICE

Credit pattern: L:T:P::3:1:0 Total Credits: 4

Course Outcomes (COs):

CO 1: Understand major forms of crime

CO 2: Gain knowledge about major theories of crime

CO 3: Practice correctional Social Work in different institutional and no institutional settings

CO 4: Understand provisions of various social legislations in India

Course Articulation Matrix - Science of Crime, Penology and Social Work Practice (OE)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	2	2	2	2	2	2	2	2	2	2	2
CO2	2	2	2	2	2	2	2	2	2	2	2	2
CO3	2	2	2	2	2	2	2	2	2	2	2	2
CO4	2	2	2	2	2	2	2	2	2	2	2	2
Weighted Average	2	2	2	2	2	2	2	2	2	2	2	2

III Semester

HUMAN RESOURCE MANAGEMENT

Credit pattern: L:T:P::2:1:0 Total Credits: 3

CO 1: Develop necessary skill set for application of various HR issues.

CO 2: Develop the understanding of the concept of human resource management and to understand its

relevance in organizations

CO 3: Analyze the strategic issues and strategies required to select and develop manpower resources.

CO 4: Integrate the knowledge of HR concepts to take correct business decisions.

Course Articulation Matrix - Human Resource Management (HC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

SOCIAL WORK PRACTICUM - IV

Credit pattern: L:T:P::0:0:3 Total Credits: 3

Course Outcomes (COs):

CO 1: Shall initiate and participate in direct service delivery.

CO 2: Work in sensitive areas like work with alcoholics, HIV/AIDS affected persons, adolescents for life ski11s development, youth for leadership development and couples for marital relationship and

CO 3: enrichment work with elderly.

CO 4: Shall identify research areas in the community

Course Articulation Matrix - Social Work Practicum - IV (HC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	2	3	3	3	3	3	3	3	3
CO2	3	3	3	2	3	2	2	3	3	3	3	3
CO3	3	3	3	2	3	3	3	3	2	2	3	2
Weighted Average	3	3	3	2	3	2.7	2.7	3	2.7	2.7	3	2.7

SOCIAL WORK WITH TRIBAL AND RURAL COMMUNITIES.

Credit pattern: L:T:P::2:1:0 Total Credits: 3

Course Outcomes (COs):

CO 1: Able to Understand Tribal Community

CO 2: Develop adequate skills to prepare and implement integrated development plan & projects for tribal Communities

CO 3: Develop trainees as competent change agent in the field of tribal development.

Course Articulation Matrix - Social Work with Tribal and Rural Communities (SC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	2	3	3	3	3	3	3	3	3
CO2	3	3	3	2	3	3	3	3	3	3	2	3
CO3	3	3	3	2	3	3	2	3	2	3	3	3
Weighted Average	3	3	3	2	3	3	2.7	3	2.7	3	2.7	3

ORGANIZATIONAL BEHAVIOUR AND ORGANIZATIONALDEVELOPMENT

Credit pattern: L:T:P::2:1:0 Total Credits: 3

Course Outcomes (COs):

CO 1: Demonstrate the applicability of the concept of organizational behavior to understand the behavior of people in the organization.

CO 2: Analyze the complexities associated with management of the group behavior in the organization

CO 3: Demonstrate how the organizational behavior can integrate in understanding the motivation (why) behind behavior of people in the organization.

Course Articulation Matrix - Organisational Behavior and Organisational Development (SC3)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	2	3	3	3	3	3	3	2	3
CO2	2	3	2	2	3	3	2	3	2	3	2	3
CO3	3	3	2	2	3	3	3	3	3	3	2	3
Weighted Average	2.7	3	2.3	2	3	3	2.7	3	2.7	3	2	3

PREVENTIVE AND SOCIAL MEDICINE AND MEDICAL SOCIAL WORK

Credit pattern: L:T:P::2:1:0 Total Credits: 3

Course Outcomes (COs):

CO 1: Able to Understand the concept and dimensions of health.

CO 2: Able to Analyze issues related to the prevention, clinical features and treatment of major communicable and non-communicable diseases.

CO 3: Able to analyze Nature of medical social work services

CO 4: To gain understanding on health care services at different levels.

Course Articulation Matrix - Preventive and Social Medicine and Medical Social Work (SC4)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

REHABILITATION AND AFTER CARE SERVICES

Credit pattern: L:T:P::2:1:0 Total Credits: 3

Course Outcomes (COs):

CO 1: Articulate the principles of independence, inclusion, choice and self determination, empowerment, access, and respect for individual differences

CO 2: Apply the principles of disability-related legislation including the rights of people with disabilities to the practice of rehabilitation counselling

CO 3: To develop understanding on different rehabilitation settings, different therapeutic approaches to rehabilitation process.

Course Articulation Matrix - Rehabilitation and Aftercare Services (SC4)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	2	2	2	2	2	2	2	2	2	2	2
CO2	2	2	2	2	2	2	2	2	2	2	2	2
CO3	2	2	2	2	2	2	2	2	2	2	2	2
Weighted Average	2	2	2	2	2	2	2	2	2	2	2	2

SOCIAL POLICY, PLANNING AND DEVELOPMENT

Credit pattern: L:T:P::2:0:0 Total Credits: 2

Course Outcomes (COs):

CO 1: Develop understanding of the concept of social policy and social planning

CO 2: Understand Concept and nature of Development and Human Development

CO 3: Understand concept of social welfare and social welfare administration

CO 4: Acquire the social work skills adapted to facilitate the process of rehabilitation, the rights and legal provisions provided for differently abled people and assimilate the knowledge of social work practice to disability specific client service

Course Articulation Matrix - Social Policy, Planning and Development (SC5)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	2	2	2	2	2	2	2	2	2	2	2
CO2	2	2	2	2	2	2	2	2	2	2	2	2
CO3	2	2	2	2	2	2	2	2	2	2	2	2
CO4	2	2	2	2	2	2	2	2	2	2	2	2
Weighted Average	2	2	2	2	2	2	2	2	2	2	2	2

LEGAL SYSTEM IN INDIA

Credit pattern: L:T:P::2:0:0 Total Credits: 2

Course Outcomes (COs):

CO 1: Understand key concepts of deviance and crime

CO 2: Practice correctional Social Work in different institutional and noninstitutional settings

CO 3: Understand provisions of various social legislations in India

Course Articulation Matrix -Legal System in India (SC5)												
CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	3	2	2	2	2	2	2	2	2	2	2	2
CO2	3	3	2	2	3	2	2	2	2	2	2	2
CO3	3	2	2	2	2	2	2	2	3	2	3	3
Weighted Average	3	2.3	2	2	2.3	2	2	2	2.3	2	2.3	2.3

GERONTOLOGICAL SOCIAL WORK

Credit pattern: L:T:P::3:1:0 Total Credits:4

CO 1: Able to understand perspectives on aging

CO 2: Able to understand challenges and problems

CO 3: Able to Demonstrate awareness in National Policy on Older Persons

Course Articulation Matrix -Gerontological Social Work (OE)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	2	2	2	2	2	2	2	2	2	2	2
CO2	2	2	2	2	2	2	2	2	2	2	2	2
CO3	2	2	2	2	2	2	2	2	2	2	2	2
CO4	2	2	2	2	2	2	2	2	2	2	2	2

Open Elective

MANAGEMENT OF NON- GOVERNMENTALORGANIZATIONS

Credit pattern: L:T:P::3:1:0 Total Credits: 4

Course Outcomes (COs):

CO 1: Able to understand role of NGOs in societal development

CO 2: Understand the procedures for registration of NGOs

CO 3: To provide managerial training and skills

CO 4: Enhance the knowledge on the fundamentals of accounting

Course Articulation Matrix -GerontManagement of Non-Governmental Organizations (OE)												
CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	2	2	2	2	2	2	2	2	2	2	2	2
CO2	2	2	2	2	2	2	2	2	2	2	2	2
CO3	2	2	2	2	2	2	2	2	2	2	2	2
CO4	2	2	2	2	2	2	2	2	2	2	2	2
Weighted Average	2	2	2	2	2	2	2	2	2	2	2	2

IVSemester

EMPLOYEE RELATIONS AND LEGISLATIONS

Credit pattern: L:T:P::2:1:0 Total Credits: 3

Course Outcomes (COs):

CO 1: Know the development and the judicial setup of Labour Laws.

CO 2: Describe the knowledge of Industrial Relations.

CO 3: Learn the laws relating to Industrial Relations, Social Security and Working conditions and also learn the enquiry procedural and industrial discipline.

CO 4: Apply the Industrial Disputes Act for employee

Course Articulation Matrix -Employee Relations and Legislation (HC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

MENTAL HEALTH AND PSYCHIATRIC SOCIALWORK

Credit pattern: L:T:P::2:1:0 Total Credits: 3

Course Outcomes (COs):

CO 1: Able to understand psychological concepts and its relevance to Social Work

CO 2: Able to understand the basic concepts and processes in social psychology and its relevance to Social Work

CO 3: Able to understand determinants and processes of personality development

CO 4: Able to understand social attitudes and psycho-social behavior

Course Articulation Matrix -EMental Health and Psychiatric Social Work (HC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

MAJOR PROJECT

Credit pattern: L:T:P::0:0:4 Total Credits: 4

Course Outcomes (COs):

CO 1: Develop ability to initiate and conduct research

CO 2: Develop research Skills of identifying and selecting a research area and preparing research proposal

CO 3: Develop skills of doing literature review and steps of research methodology

CO 4: Familiarised with the process of data analysis and report writing

CO 5: To understand ethical considerations of research

Course Articulation Matrix -Major Project (HC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3
Weighted Average	3	3	3	3	3	3	3	3	3	3	3	3

SOCIAL WORK PRACTICUM – V

Credit pattern: L:T:P::0:0:3 Total Credits: 3

Course Outcomes (COs):

CO 1: Shall initiate and participate in direct Service delivery.

CO 2: Work in areas like work with Human Resource Management, Psychiatric SocialWork and key areas

CO 3: Shall identify research areas in the community

Course Articulation Matrix -Social Work Practicum – V (HC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	3	3	3	3	3	3	2	2	3	3
CO2	3	3	3	3	3	3	3	3	2	2	3	3
CO3	3	3	3	3	3	3	3	3	2	2	3	3
Weighted Average	3	3	3	3	3	3	3	3	2	2	3	3

SOCIAL WORK PRACTICUM – VI: (BLOCK PLACEMENT)

Credit pattern: L:T:P::0:0:3 Total Credits: 3

Course Outcomes (COs):

CO 1: Shall work in an organization continuously for 6 weeks and understand the work place better

CO 2: Work in areas relevant to social work interventions

CO 3: Shall identify research areas in the community / Human Resource Management / Psychiatric SocialWork

Course Articulation Matrix -SOCIAL WORK PRACTICUM – VI: (BLOCK PLACEMENT)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	3	2	2	3	3	3	2	2	3	3	3
CO2	3	3	2	2	3	3	3	2	2	3	3	3
CO3	3	3	2	2	3	3	3	2	2	3	3	3
Weighted Average	3	3	2	2	3	3	3	2	2	3	3	3

HUMAN RESOURCE DEVELOPMENT ANDEMPLOYEEWELLNESS

Credit pattern: L:T:P::2:0:0 Total Credits: 2

Course Outcomes (COs):

CO 1: Understand key functions in management as applied in practice.

CO 2: Understand and analyze different tends in HRD that have influenced both Human Resource Development and Human Development.

CO 3: Provide in-depth knowledge into the issues related to trainee, the trainer organization in the context of training and learning process

CO 4: Provide inputs on assessment and evaluation of training programme this is essential to determine training effectiveness

Course Articulation Matrix -Human Resource Development and Employee Wellness (HC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	3	2	2	2	3	2	2	2	2	2	2	2
CO2	3	2	2	2	3	2	2	2	2	2	2	2
CO3	3	2	2	2	3	2	2	2	2	2	2	2
CO4	3	2	2	2	3	2	2	2	2	2	2	2
Weighted Average	3	2	2	2	3	2	2	2	2	2	2	2

CASE STUDIES

Credit pattern: L:T:P::0:0:2 Total Credits: 2

Course Outcomes (COs):

CO 1: Analyze the case using relevant theoretical concepts from unit

CO 2: Offer learners an opportunity to think and act critically reflect on their process of thinking and action and its consequences

Course Articulation Matrix -Case studies (HC)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	2	2	2	2	2	2	2	2	2	2	2
CO2	2	2	2	2	2	2	2	2	2	2	2	2
Weighted Average	2	2	2	2	2	2	2	2	2	2	2	2

DISASTER MANAGEMENT

Credit pattern: L:T:P::3:1:0 Total Credits: 4

Course Outcomes (COs):

CO 1: Able to concepts, theories and approaches of disaster management with specific reference to Indian context

CO 2: Develop skills to analyse factors contributing to disaster

CO 3: Develop an understanding of the process of disaster management

CO 4: Develop an understanding of the social worker's role in the team for disaster management.

Course Articulation Matrix -Disaster Management (OE)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	2	2	2	2	2	2	2	2	2	2	2
CO2	2	2	2	2	2	2	2	2	2	2	2	2
CO3	2	2	2	2	2	2	2	2	2	2	2	2
CO4	2	2	2	2	2	2	2	2	2	2	2	2
Weighted Average	2	2	2	2	2	2	2	2	2	2	2	2

CORRECTIONAL ADMINISTRATION AND SERVICES

Credit pattern: L:T:P::3:1:0 Total Credits: 4

Course Outcomes (COs):

CO1: Able to recognize correctional institution and non-institutional programmes.

CO2: To gain understanding different services for juvenile, young and adults' offenders and also to understand the legal provisions and procedures for their assistance

CO3: Ability to identify structure, function, treatment and facilities provided by the institutions.

Course Articulation Matrix -Correctional Administration and Services (OE)												
CO/PO	**PO1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO7**	**PO 8**	**PO 9**	**PO10**	**PO11**	**PO12**
CO1	2	2	2	2	2	2	2	2	2	2	2	2
CO2	2	2	2	2	2	2	2	2	2	2	2	2
CO3	2	2	2	2	2	2	2	2	2	2	2	2
Weighted Average	2	2	2	2	2	2	2	2	2	2	2	2

Department of Tourism and Hospitality Management

MTTM-PG

Programme Outcomes for MTTM

PO1: Apply knowledge of tourism and travel management and management specialization.

PO2: Identify, formulate research literature and analyze tourism business management problems

PO3: Design solutions for complex tourism business management problems that meet specified needs with appropriate considerations for profits- people- planet

PO4: Conduct investigations of complex travel and tourism business management problems using research band knowledge, analysis of secondary data and interpretation of the same.

PO5: Create, select and apply appropriate techniques, resources and it tools, including modelling and solution generation.

PO6: Apply reasoning informed by the contextual knowledge to areas social, health, safety, legal and cultural issues.

PO7: Understand and evaluate the sustainability and impact of travel and tourism management work in the solution in societal and sustainability context.

PO8: Apply ethical principles and commit to tourism professional ethics and norms of tourism and travel practice**.**

PO9: Function effectively as an individual and as a member or leader in diverse teams and in multi-specialization teams

PO10: Able to comprehend and write effective reports and make effective presentation, including documentation and retrieval.

PO11: Demonstrate travel and tourism business management knowledge and understanding of tourism management principles.

PO12: Recognize the need for and have the preparation and ability to engage in independent and lifelong learning.

Semester – I

Course Title HC (1): Tourism Principles and Practices

Course Outcomes:

CO1: Acquire knowledge on the concepts of tourism, tourists, Forms and characteristics of Tourism, tourism resources, components, tourism system and its elements

CO2: Acquire knowledge on the concept, functions and characteristics of management and its relevance in the tourism industry

CO3: Analyze the nature and purpose of planning and organizing, their advantages and Disadvantages.

CO4: Explore the concept, problems and process of directing and controlling with respect to human aspect

CO5: Acquire knowledge on different types of tourism and alternative tourism

Course Articulation Matrix - 19L101

PO CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	2	1	1	1	-	2	2	2	-	1	3	1
CO2	2	2	3	2	1	-	3	2	1	1	2	1
CO3	2	1	2	-	2	-	2	1	3	2	1	1
CO4	2	1	-	-	2	-	3	1	-	2	-	2
CO5	2	2	1	-	-	1	-	2	-	3	1	2
WA	**2**	**1.4**	**1.75**	**1.5**	**1.66**	**1.5**	**2.5**	**1.6**	**2**	**1.8**	**1.75**	**1.4**

Course Title HC (2): Air travel management

Course Outcomes:

CO1: Acquire knowledge on History, types. Terminologies of aviation and airline industries
CO2: Explore the Classes and services of an Aero plane and its fundamentals
CO3: Acquire knowledge on airline policies with respect to various categories
CO4: Acquire knowledge on methods of handling baggage's and tracing them
CO5: Acquire knowledge on effect of health and health considerations on travel rules

Course Articulation Matrix - 19L102

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	-	1	2	1	-	-	3	-	2	-	1
CO2	2	1	2	-	1	-	2	2	2	-	3	1
CO3	2	1	2	3	2	2	1	-	-	2	2	1
CO4	2	2	2	1	1	-	1	-	2	-	3	-
CO5	2	2	2	-	2	-	3	1	2	1	1	2
WA	**2**	**1.5**	**1.8**	**2.3**	**1.4**	**1**	**1.75**	**2**	**2**	**1.66**	**2.25**	**1.25**

Course Title HC (3): Marketing Management for Tourism

Course Outcomes:

CO1: Acquire knowledge on Marketing Management, Public Relations and Sales promotion
CO2: Analyzing the importance of promotion in the marketing mix for tourism management
CO3: Exploring the Role of advertising in Economic development
CO4: Acquire knowledge on advertising campaign planning and communication strategy
CO5: Acquire knowledge on Advertising media and legal aspects of advertising business

Course Articulation Matrix - 19L103

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	1	-	-	1	2	3	1	1	2
CO2	2	1	1	-	1	2	1	2	1	2	-	2
CO3	2	1	3	1	1	2	2	-	-	-	2	2
CO4	2	1	3	1	1	2	1	2	2	1	2	1
CO5	2	3	1	1	-	-	2	-	1	-	3	1
WA	**2**	**1.6**	**2.2**	**1**	**1**	**2**	**1.4**	**2**	**1.75**	**1.33**	**2**	**1.6**

Course Title HC (4): Communication Skills for Tourism

Course Outcomes:

CO1: Acquire knowledge on communication, process, methods and barriers

CO2: Analyzing the importance of media, mode and computers in communication

CO3: Exploring the concepts of business letter, agenda, reports, summaries and representation

CO4: Acquire knowledge on communication verbal, non-verbal, etiquettes and skills

CO5: Acquire knowledge on presentation and audio video aids

Course Articulation Matrix - 19L104

PO **CO**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	2	2	3	1	-	-	1	2	3	1	1	2
CO2	2	1	1	-	1	2	1	2	1	2	-	2
CO3	2	1	3	1	1	2	2	-	-	-	2	2
CO4	2	1	3	1	1	2	1	2	2	1	2	1
CO5	2	3	1	1	-	-	2	-	1	-	3	1
WA	**2**	**1.6**	**2.2**	**1**	**1**	**2**	**1.4**	**2**	**1.75**	**1.33**	**2**	**1.6**

Course Title SC (1): Hotel and hospitality operations

Course Outcomes:

CO1: Exploring the Inter-relationship between hotel and tourism industry and concepts of hotel industry

CO2: Analyzing Organization Structure and different departments of hotels

CO3: Acquire knowledge on coordination and organisation of front office and bell desk

CO4: Acquire knowledge on the organization and importance of Housekeeping

CO5: Acquire knowledge on Functions, operations and trends in Hospitality Industry

Course Articulation Matrix - 19L105

PO **CO**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	2	2	1	2	3	1	2	-	2	3	1	1
CO2	2	2	3	1	1	1	2	2	2	3	-	1
CO3	2	2	-	1	-	2	2	2	-	1	1	1
CO4	2	1	2	1	2	1	-	-	3	1	1	2
CO5	2	2	1	2	3	3	2	1	1	2	1	2
WA	**2**	**1.8**	**1.75**	**1.4**	**2.25**	**1.6**	**2**	**1.66**	**2**	**2**	**1**	**1.4**

Course Title SC (2): Tourism Geography

Course Outcomes:

CO1: Acquire knowledge on geographical components nature of Tourism system

CO2: Analyzing geography of Actual demand and Suppressed Demand for Tourism

CO3: Acquire knowledge on Importance of geography in World Tourism across difference time zones along with case studies

CO4: Acquire knowledge on tourism across various climate zones

CO5: Acquire knowledge on characteristics and management of tourism Resources and Tourism Planning.

Course Articulation Matrix - 19L106

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	3	2	3	2	3	1	1	1	1
CO2	2	-	2	-	1	3	1	1	1	2	-	1
CO3	2	2	-	1	-	2	3	1	1	2	1	1
CO4	2	2	-	1	3	-	2	1	1	2	1	2
CO5	2	2	1	3	2	1	1	2	2	2	1	2
WA	**2**	**2**	**1.33**	**2**	**2**	**2.25**	**1.8**	**1.6**	**1.4**	**1.8**	**1**	**1.4**

Course Title SC (3): Study tour, Project report and viva voce

Course Outcomes:

CO1: Acquire knowledge on the concepts of tourism and commitment to ethical practices of tourism.

CO2: Acquire knowledge on diverse nature of tourism, including culture and place, global/local perspectives

Course Articulation Matrix -19L107

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	2	-	-	2	1	3	1	-	2
CO2	2	1	2	3	1	-	-	1	1	2	1	-
WA	**2**	**1.5**	**1.5**	**2.5**	**1**	**-**	**2**	**1**	**2**	**1.5**	**1**	**2**

Semester - II

Course Title HC (5): Organizational Behavior

Course Outcomes:

CO1: Acquire knowledge on the concepts of organizational behavior, psychology, personal growth, personal life style and training individual conflict.

CO2: Acquire knowledge on the aspects of individuals and organization related to attitudes, aptitudes, personality and perception – beliefs – values.

CO3: Analyze the nature, purpose and process of employee counseling, negotiation skills.

CO4: Explore the concepts of motivation, job design, Stress, employee discipline.

CO5: Acquire knowledge on organizational culture, types and good culture.

Course Articulation Matrix -19L201

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	2	1	2	1	1	2	1	2	2
CO2	2	2	2	1	1	2	1	-	1	1	1	1
CO3	2	-	1	-	1	1	1	1	1	-	1	1
CO4	2	2	1	2	1	1	1	2	1	1	1	1
CO5	2	1	1	1	2	1	1	1	1	1	1	1
WA	**2**	**1.75**	**1.2**	**1.5**	**1.2**	**1.4**	**1**	**1.25**	**1.2**	**1**	**1.2**	**1.2**

Course Title HC (6): Tour Operations Management

Course Outcomes:

CO1: Acquire knowledge on the concepts, functions and types of tour operators, tour operations and various segments of travel industry.

CO2: Acquire knowledge on rules, roles, income of tour operators, CRS, GDS.

CO3: Analyse the types, forms and components of package tours, inbound and outbound packages,

CO4: Explore the concept related to itinerary and brochure designing.

CO5: Acquire knowledge on tour costing and pricing, trends and challenges.

Course Articulation Matrix -19L202

PO **CO**	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	2	2	2	2	1	2	1	2	2	1	1	2
CO2	2	1	1	1	1	-	1	1	-	-	1	1
CO3	2	2	3	2	1	1	2	1	1	1	1	2
CO4	2	2	1	1	1	1	1	1	1	1	1	2
CO5	2	1	2	1	1	1	1	2	1	1	1	2
WA	**2**	**1.6**	**1.8**	**1.4**	**1**	**1.25**	**1.2**	**1.4**	**1.25**	**1**	**1**	**1.8**

Course Title HC (7): Travel Agency Management

Course Outcomes:

CO1: Acquire knowledge on the concepts of travel and tourism industry, travel agency and role of TAAI and UFTA.

CO2: Acquire knowledge on the concepts of travel agency and tour operations and its growth and development

CO3: Analyze the structure of travel agency, sources of income, travel formalities and principal suppliers and challenges.

CO4: Explore the concept and prospects of online travel agency with case studies, travel agent access to GDS and CRS.

CO5: Acquire knowledge to set up travel agency, types of organisation, rules for getting approval, IATA rules and regulation for accreditation.

Course Articulation Matrix -19L203

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	1	1	1	1	1	-	1	-	1
CO2	2	2	1	2	2	1	2	1	1	1	1	2
CO3	2	1	2	1	1	1	1	1	1	1	1	2
CO4	2	1	2	1	-	2	1	1	1	1	1	2
CO5	2	2	1	2	1	1	1	1	1	1	1	2
WA	**2**	**1.4**	**1.4**	**1.4**	**1.25**	**1.2**	**1.2**	**1**	**1**	**1**	**1**	**1.8**

Course Title SC (4): Study tour, Project report and viva voce

Course Outcomes:

CO1: Acquire knowledge on the concepts of tourism and commitment to ethical practices of tourism.

CO2: Acquire knowledge on diverse nature of tourism, including culture and place, global/local perspectives

Course Articulation Matrix - 19L204

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1
CO1	2	2	1	2	-	-	2	1	3	1	-	2	2
CO2	2	1	2	3	1	-	-	1	1	2	1	-	2
WA	**2**	**1.5**	**1.5**	**2.5**	**1**	**-**	**2**	**1**	**2**	**1.5**	**1**	**2**	**2**

Course Title SC (5): Airline Ticketing

Course Outcomes:

CO1: Acquire knowledge on IATA area, city codes-airport codes, CRS/GDS.

CO2: Acquire knowledge on the travel classes and class codes, computerized, manual ticketing and charges.

CO3: Analyze the fare construction terminology, types of journeys, transfer point.

CO4: Explore the concept of international fares and ticketing, e-ticketing, currency system.

CO5: Acquire knowledge on application of Amadeus in PNR, encoding and decoding, seat, meal, refund.

Course Articulation Matrix -19L205

PO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1
CO1	2	1	1	1	1	1	1	1	1	2	1	1	2
CO2	2	2	1	2	1	1	1	2	1	1	2	1	2
CO3	2	2	1	1	2	1	1	1	2	2	1	1	2
CO4	2	1	-	-	-	1	1	1	-	1	-	1	1
CO5	2	1	-	-	-	1	1	1	-	1	-	1	1
WA	**2**	**1.4**	**1**	**1.3**	**1.3**	**1**	**1**	**1.2**	**1.3**	**1.4**	**1.3**	**1**	**1.6**

Course Title SC (6): Destination Planning and Development

Course Outcomes:

CO1: Acquire knowledge on destination development, types, products, selection process.

CO2: Acquire knowledge on the conceptof destination planning, tourism potential, economic, social, cultural and environmental considerations.

CO3: Analyses the nature and purpose of destination image development, Case Study of Karnataka.

CO4: Explore the concept, problems and process destination promotion and publicity, Marketing Mix, role of DMO,

CO5: Acquire knowledge on different types of institutional support, WTO Guidelines, rural tourism plan, Tourism Policy, sustainable Tourism destination.

Course Articulation Matrix -19L206

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1
CO1	2	1	2	1	2	2	1	2	1	2	1	2	2
CO2	2	1	2	1	1	1	1	1	1	2	1	1	1
CO3	2	1	2	1	1	2	1	1	1	2	1	1	1
CO4	2	1	1	1	1	1	1	-	1	2	-	1	1
CO5	2	1	1	1	2	2	1	1	-	2	1	1	1
WA	**2**	**1**	**1.6**	**1**	**1.4**	**1.6**	**1**	**1.25**	**1**	**2**	**1**	**1.2**	**1.2**

Course Title OE (1): Travel and Tourism Management

Course Outcomes:

CO1: Acquire the knowledge of tourism, tourist, hospitality, tourism system, types, anatomy of tourism and development.

CO2: Exemplify the impact of tourism and multiplier effect.

CO3: Appraise the features and functions of service providers and IATA rules and regulations.

CO4: Identify different types of travel formalities, customs, regulations and insurance.

CO5: Illustrate the basic concepts and functions of transportation in tourism.

Course Articulation Matrix - 19L207

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	1	2	1	1	1	1	1	-	1
CO2	1	1	1	1	1	1	2	1	1	1	-	1
CO3	2	2	1	1	2	2	2	1	2	2	1	1
CO4	2	2	-	-	1	-	-	-	1	1	-	1
CO5	2	1	-	-	1	-	1	-	1	1	-	1
WA	**1.8**	**1.6**	**1**	**1**	**1.4**	**1.3**	**1.5**	**1**	**1.2**	**1.2**	**1**	**1**

Semester – III

Course Title HC (8): Accounting for Tourism Industry

Course Outcomes:

CO1: Acquire knowledge on the concepts of Characteristics & Management Accounting, Differences between Financial Accounting and Management Accounting.

CO2: Acquire knowledge on the concept of Financial Statement, Comparative Statements, Statements and Trend Percentages.

CO3: Analyze the nature and purpose of Fund Flow statement, Cash Flow statement, Problems on preparation of Cash Flow statements and Advantages and disadvantages.

CO4: Explore the concept, Customers Accounts, Guest Accounts, Creation and Maintenance of Guest Accounts, Correction of errors, Corrections and Allowance, Non-Resident Guests, City Ledger, Advances received in Cash and Paying bills by credit cards.

CO5: Acquire knowledge on Responsibilities of Front Office Accounting System, Accounts, Folios, Vouchers, Point of Sales (POS), Ledgers, Credit Monitoring, Differences between Ordinary Cheques and Travelers cheques, foreign currency, Visitor Tabular Ledger, VTL.

Course Articulation Matrix - 19L301

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	-	1	2	1	2	-	2	1	2
CO2	2	-	2	2	1	2	2	1	2	-	2	1
CO3	2	1	-	1	2	-	1	2	2	-	2	2
CO4	2	2	2	1	1	2	1	1	-	2	1	-
CO5	2	2	1	2	-	2	-	2	1	1	2	1
WA	**2**	**1.75**	**1.5**	**1.5**	**1.25**	**2**	**1.25**	**1.6**	**1.66**	**1.66**	**1.6**	**1.5**

Course Title HC (9): International Tourism Destinations: 19L302

CO1: Acquire knowledge on the concepts of Tourism Destination in activities in USA, Canada, Mexico West Indies, Brazil-Argentina, Venezuela and Colombia.

CO2: Acquire knowledge on the concept of Tourism Destination in activities in England, Italy, France-Germany, Austria, Switzerland, Finland and Spain.

CO3: Acquire knowledge on the concept of Tourism Destination in Egypt, Kenya, Tanzania, South Africa and Ethiopia.

CO4: Acquire knowledge on the concept of Tourism Destination in UAE-Turkey-Iran –Iraq and Saudi Arabia.

CO5: Acquire knowledge on the concept of Tourism Destination in India - China-Japan-Singapore- Malaysia-Thailand-Indonesia-Sydney-Canberra and New Zealand.

Course Articulation Matrix - 19L302

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	2	1	1	2	1	-	2	1	-	1
CO2	2	2	1	2	-	2	1	2	1	1	1	1
CO3	2	2	-	1	2	1	-	1	2	2	1	2
CO4	2	1	2	1	2	-	2	2	-	1	2	-
CO5	2	2	1	-	1	2	1	2	1	-	1	2
WA	**2**	**1.6**	**1.5**	**1.25**	**1.5**	**1.75**	**1.25**	**1.75**	**1.5**	**1.25**	**1.25**	**1.5**

Course Title HC (10): Tourism Research Methods: 19L303

Course Outcomes:

CO1: Acquire knowledge on the concepts of research, types, literature review.

CO2: Acquire knowledge on the concept of research design, process, hypothesis.

CO3: Analyse the concepts of sampling, sampling size, techniques and types of data collection.

CO4: Explore the concept of processing data, classification, coding, tabulation, graphical representation and analysis of data

CO5: Acquire knowledge on data presentation, report writing.

Course Articulation Matrix - 19L303

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	2	1	-	2	2	-	1	1	2
CO2	2	1	2	1	2	1	-	2	1	2	1	1
CO3	2	2	-	1	2	1	2	-	1	2	-	1
CO4	2	1	2	-	-	1	2	1	2	1	2	2
CO5	2	3	2	2	1	2	1	-	2	-	1	-
WA	**2**	**1.6**	**1.75**	**1.5**	**1.5**	**1.25**	**1.75**	**1.66**	**1.5**	**1.5**	**1.25**	**1.5**

Course Title SC (7): Study tour, Project report and viva voce: 19L304

Course Outcomes:

CO1: Acquire knowledge on the concepts of tourism and commitment to ethical practices of tourism.

CO2: Acquire knowledge on diverse nature of tourism, including culture and place, global/local perspectives

Course Articulation Matrix - 19L304

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	2	-	-	2	1	3	1	-	2
CO2	2	1	2	3	1	-	-	1	1	2	1	-
WA	**2**	**1.5**	**1.5**	**2.5**	**1**	**-**	**2**	**1**	**2**	**1.5**	**1**	**2**

Course Title SC (8): Tourism Planning and Development: 19L305

Course Outcomes:

CO1: Acquire knowledge on the concepts of Sustainable Tourism, Economic Forces, Principles of Sustainable Tourism, Carrying Capacity, Environmental Impact of Tourism.

CO2: Acquire knowledge on the concept of Tourist Destinations, Destination Amalgam, Tourism Development, Conceptual Tourism Planning, Evolution of Tourism Planning, General Concepts of Planning, Levels and Types of Tourism Planning.

CO3: Analyse the nature and purpose of National Tourism Policy 1982 and 2002, National Action Plan on Tourism, 1992: Special Tourism Area Development Programme, National Tourism Board, National Committee on Tourism.

CO4: Explore the concept Basic Properties of Ecology, Environment, Relationship of Ecology and Tourism – Tourism Activities, Ecology and Environment

CO5: Acquire knowledge on Factors creating the issues of Global Concerns, Rise in Temperature, Melting of Snow Caps, Rise in Sea Level, Monsoon, Global Concern on Tourism, Prevention of Hazards.

Course Articulation Matrix - 19L305

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	1	1	2	1	2	-	2	-	1	2
CO2	2	1	-	2	1	2	1	1	2	2	1	1
CO3	2	1	2	-	1	2	-	2	-	1	2	2
CO4	2	-	2	2	2	1	2	1	1	1	-	1
CO5	2	2	1	2	1	2	1	2	1	2	1	2
WA	**2**	**1.25**	**1.5**	**1.75**	**1.4**	**1.6**	**1.5**	**1.5**	**1.5**	**1.5**	**1.25**	**1.6**

Course Title SC (9): Event Management: 19L306

CO1: Acquire knowledge on the concepts of Conventions and Expositions, Five Cs of event

management, Event Planner, Participants, Economy and Society.

CO2: Acquire knowledge on the concept of MICE, Economic and social significance, TA's and TO's as meeting planner, convention visitor bureaus.

CO3: Analyse the nature and purpose of conference venues- facilities, check-in and check-out

procedures, Convention manager functions of CVB, ICPB and ICCA.

CO4: Explore the concept Basic Properties of Management – Goals – Objectives – Targeting, Designing, Budget – Site Selection, Computers and LCD, incentive tour and special

requirements

CO5: Acquire knowledge on Case studies: Tourism festivals, Trade Fairs.

Course Articulation Matrix - 19L306

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	2	1	2	1	2	1	-	1	2
CO2	2	2	2	1	2	1	1	-	2	1	2	1
CO3	2	1	1	2	1	2	2	2	2	2	1	2
CO4	2	1	2	2	1	1	1	2	-	1	2	-
CO5	2	2	2	-	2	2	1	-	1	2	1	1
WA	**2**	**1.6**	**1.6**	**1.75**	**1.4**	**1.6**	**1.2**	**2**	**1.5**	**1.5**	**1.4**	**1.5**

Course Title SC (10): 19L307

Digital Applications in Tourism (Theory)

Digital Applications in Tourism (Practical)

Course Outcomes:

CO1: Acquire knowledge on the concepts of Concepts of ICTs, benefits & limitations of ICTs, implementations, tourism stakeholders, challenges in the tourism industry.

CO2: Acquire knowledge on the concept of Geographic information system (GIS), Central Reservation System (CRS), Global Distribution System (GDS), Intermediaries, Electronic Payment Systems (EPS), Electronic Fund Transfers (EFT), Electronic Data Interchange (EDI),

Enterprise Resource Planning (ERP), Management Information Systems (MIS), Executive Information System (EIS), Knowledge Based systems.

CO3: Analyse the nature and purpose of ICT usage, ICTs in the Hospitality and Airline Industry, GDS

and CRS, Business process reengineering (BPR), Bank Settlement Plan (BSP), ICT supported

Consumer Relationship Management, social media and mobile services in tourism

CO4: Explore the concept on ICT usage by Demand, Travel news, electronic bulletin boards GDS –

automated ticket machines, TV based tourism and booking, videotext system, interactive TV,

Voice systems, social media and ICT, Virtual Tourist Commmoduleies.

CO5: Acquire knowledge on Travel & Tourism Business models & Cyber security, Business

intelligence and smart business networks, online business models, website optimization, Online

Travel Agency (OTA), travel agency automation, voyager systems, tour package planning systems, managing e-service centre, delivering e-value to customers, cyber crimes, cyber laws

and security.

Course Articulation Matrix - 19L307

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	1	2	2	1	2	2	2	-	2
CO2	2	1	2	2	1	2	-	1	2	2	2	2
CO3	2	1	1	2	-	1	1	2	1	-	2	-
CO4	2	2	2	1	2	1	2	2	-	1	1	2
CO5	2	2	1	-	2	2	1	1	2	1	2	1
WA	**2**	**1.6**	**1.6**	**1.5**	**1.75**	**1.6**	**1.25**	**1.6**	**1.75**	**1.5**	**1.75**	**1.75**

Course Title OE (2): Heritage of India: 19L308

Course Outcomes:

CO1: Acquire knowledge on the concepts of Heritage, Kinds, Tangible and Intangible.

CO2: Acquire knowledge on the concept of Indian Art, Paintings, Sculptors & Architecture.

CO3: Analyse the nature and purpose of Indian Dance, festivals & Music.

CO4: Explore the concept of Caves, Churches, Monuments, Mountain Railways, Heritage Sites& National Parks

CO5: Acquire knowledge on ASI, Group of Monuments.

Course Articulation Matrix - 19L308

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	2	2	2	2	1	2	1	-
CO2	2	1	1	-	1	2	1	1	2	1	2	2
CO3	2	2	1	2	1	1	2	-	2	-	2	-
CO4	2	1	2	-	2	1	2	1	1	-	1	1
CO5	2	2	1	2	1	2	1	2	-	2	-	2
WA	**2**	**1.6**	**1.4**	**2**	**1.4**	**1.6**	**1.6**	**1.5**	**1.5**	**1.66**	**1.5**	**1.66**

Semester –IV

HC (11) Syllabus for MTTM

Course Title HC (11): On the job training for a minimum period of 2 months in any tourism / hospitality industry: 19L401

**Course Outcomes: **

CO1: Acquire knowledge on the concepts of tourism and learn to appreciate work and its function in the economy.

CO2: Acquire knowledge on the concept and how to develop work habits and attitudes necessary for job success.

CO3: Analyze the nature and purpose of developing communication, interpersonal and other critical skills in the job interview process.

CO4: To expose the students to understand the working of the organization/ company /industry and take up an in-depth study of an issue / problem in the area of specialization

Course Articulation Matrix - 19L401

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	2	1	3	-	-	2	3	1	3	2
CO2	2	-	-	2	3	2	2	1	3	2	1	3
CO3	2	1	2	1	-	2	-	1	3	2	-	2
CO4	3	2	3	2	3	2	2	2	1	2	3	2
WA	**2.5**	**1.33**	**1.75**	**1.5**	**3**	**1.5**	**2**	**1.5**	**2.5**	**1.75**	**2.3**	**2.25**

Course Title HC (12): Training report and Viva voce:19L402

CO1: Analyze practical and managerial skills in the working environment their ability to apply them effectively.

CO2: Analyze the ability to apply relevant technology for the production and management of tourism experiences

Course Articulation Matrix - 19L402

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	3	-	2	1	1	1	3	2	3	2
CO2	3	3	3	2	3	-	2	1	2	2	3	2
WA	**2**	**2.5**	**2**	**2**	**2.5**	**1**	**1.5**	**1**	**2.5**	**2**	**2**	**2**

Course Title HC (13): Start up & Entrepreneurship Development: 19L403

Course Outcomes:

CO1: Acquire knowledge on the concept of entrepreneurship and the motivations and also the various types of entrepreneurships.

CO2: Acquire knowledge on the concept, of various ideas to start up and to understand the environmental and competitive advantagesand their relevance in tourism industry.

CO3: Analyze the nature and purpose of legal structures and types of Legal Structures, Entity registration process

CO4: Explore the concept, problems and process on financial Basics, financing and management of working capital

CO5: Acquire knowledge on importance of business plan before starting any business and marketing strategies for better business plan

Course Articulation Matrix - 19L403

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	-	-	-	2	1	2	1	2	-	-	2
CO2	2	2	2	1	2	1	3	2	3	1	2	3
CO3	2	2	1	3	-	1	-	1	2	1	2	2
CO4	2	2	1	-	-	-	2	1	2	1	-	1
CO5	2	2	2	1	-	-	2	2	3	3	3	1
WA	**2**	**2**	**1.5**	**1.66**	**2**	**1**	**2.25**	**1.4**	**2.4**	**1.5**	**2.3**	**1.8**

Course Title SC (11): Project report and Viva voce: 19L404

Course Outcomes:

CO1: Analyze practical and managerial skills in the working environment their ability to apply them effectively.

CO2: Analyze the ability to apply relevant technology for the production and management of tourism experiences

Course Articulation Matrix - 19L404

PO / CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	1	-	-	1	3	3	2	2	-	2	1
CO2	2	2	1	-	3	1	1	1	2	1	1	1
WA	**2**	**1.5**	**1**	**-**	**2**	**2**	**2**	**1.5**	**2**	**1**	**1.5**	**1**

Course Title SC (12): Personality Development & Soft skills: 19L405

Course Outcomes:

CO1: Acquire knowledge on the concept of Personality Development and dimensions of personality.

CO2: Acquire knowledge on the concept, Attitude & Motivation Attitude and the Significance of positive attitude.

CO3: Analyze the advantages of Do's and Don'ts to develop positive selfesteem and interpersonal behavior relationships

CO4: Explore the concept and importance of Body language and management of stress and conflicts

CO5: Acquire knowledge on art of participating in Group Discussion and facing personal interview.

Course Articulation Matrix - 19L405

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	2	2	1	2	1	3	2	2	1	2
CO2	2	1	2	2	1	1	1	1	1	1	1	3
CO3	2	2	1	2	3	1	1	1	1	1	1	1
CO4	2	1	2	2	1	3	1	1	2	1	1	3
CO5	2	2	1	1	1	1	1	1	2	1	1	1
WA	**2**	**1.6**	**1.6**	**1.8**	**1.4**	**1.6**	**1**	**1.4**	**1.6**	**1.2**	**1**	**2**

Course Title SC (13): Wellness Tourism: 19L406

Course Outcomes:

CO1: Acquire knowledge on the concept of origin and historical development of wellness tourism over ages and health as a motivator to travel.

CO2: Acquire knowledge on the concept of factors influencing health and wellness of the tourism and forms of health tourism

CO3: Analyze the advantages of Mind and Spirit relationship importance of Ayurveda, Yoga & Naturopathy

CO4: Explore the concept of yoga and meditation and development of yoga and meditation in India

CO5: Acquire knowledge on concepts of Medical tourism and benefits of medical tourism, Economics of medical tourism

Course Articulation Matrix - 19L406

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	2	3	2	3	1	1	2	1	-	1
CO2	2	1	1	2	1	3	1	1	1	1	1	1
CO3	2	1	2	1	2	2	1	1	-	-	-	2
CO4	2	1	1	1	1	1	1	1	2	-	1	2
CO5	2	1	1	2	1	3	3	1	-	-	1	1
WA	**2.2**	**1.2**	**1.4**	**1.8**	**1.4**	**2.4**	**1.4**	**1**	**1.66**	**1**	**1**	**1.4**

Course Title SC (14): Air Cargo Management: 19L407

Course Outcomes:

CO1: Acquire knowledge on the concept of origin and historical development of Air Cargo

CO2: Acquire knowledge on the concept of Procedure for Loading and Unloading of Cargo

CO3: Acquire knowledge on the elementary theories of flight such as theory of gravitation, condition equilibrium.

CO4: Explore the concept of Equipment used near the Aircraft

CO5: Acquire knowledge on Logistics Management

Course Articulation Matrix - 19L407

PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	-	-	1	1	-	-	1	1	1	-	1
CO2	2	-	-	1	-	-	-	1	1	2	-	1
CO3	2	-	1	1	-	-	1	1	1	2	-	1
CO4	2	-	-	1	-	-	-	1	1	1	-	1
CO5	2	1	1	1	-	-	1	1	1	2	1	1
WA	**2**	**1**	**1**	**1**	**1**	**-**	**1**	**1**	**1**	**1.6**	**1**	**1**