

BBA (Healthcare & Hospital Management)

Introduction:

The Department of Management of Sister Nivedita University offers a range of innovatively designed programmes whose curriculum is constantly updated to meet the changing requirement of the students and industry. It has recorded consistent improvement in its academics, research and placement performance over the last few years.

We have designed our syllabus to strike a balance between professional knowledge and personal skills. We are confident that our current curriculum has enabled over-all development of budding managers, to meet the expectations of the corporate world. The curriculum is taught by a distinguished faculty combining academic excellence and real-world experience with dedication and commitment.

During the course, the students are reassured to get hands-on experience in the corporate world through internship projects in reputed organizations which will help to amalgamate theoretical knowledge with practical experience. They also undertake projects benefiting local industries or dealing with local problems. These projects enable them to understand the relevance working in a group and help them to realize the finer aspects and importance of teamwork. This will help them to establish themselves in this dynamic corporate world of today.

With this brief introduction, we welcome you to be a part of our journey towards being a world class centre of excellence in education, training and research in regards to Management studies.

Program Aims:

The program aims to enable graduates to understand the challenges of business across all sectors in different functional areas of management which is actually amalgamation of academic rigor and practical exposures. There is a careful balance of teaching and learning, individual and group work, case study analysis and class-based discussion, problem solving and decision-making abilities, conceptual and analytical discussion, and above all regular seminars by external industry experts and academia.

Learning outcomes:

Students who complete program successfully will be able to

- Develop decision making skills
- Demonstrate problem solving skills
- Use application of technology in Business
- Demonstrate a critical awareness of current issues in business
- Demonstrate business intelligence system

Knowledge Objectives:

- Develop cross functional skills
- Create holistic management approach
- Sensitivity towards cross cultural skills
- Develop peer-based learning and working in a group

Skills Objectives:

- Use of conceptual, analytical and quantitative skills for decision making
- Demonstrate ethical, social and environmental responsibilities in business environment,
- Demonstrate the ability to apply knowledge to real business situation

Programme Educational Objectives (PEO)

PEO-01: To develop the talent and expertise in the area of leadership, interpersonal skills, entrepreneurship, manpower management etc. in healthcare sector.

PEO-02: To empower undergraduate students with knowledge that would enable them to meet the needs at different tier of healthcare and hospital business in the globalized business environment.

PEO-03: To help undergraduate students to become responsible citizen and lead the business with their moral and ethical values.

PEO-04: To enable undergraduate students to continuously improve the health care processes throughout the organisations with their skills and ensure quality health care.

PEO-05: To inculcate interpersonal skills, communication skills, ability to work as a team in the undergraduate students to meet diverse needs of the healthcare industry.

Programme Outcomes (PO)

At the end of the BBA (Healthcare & Hospital Management) Programme, graduate students will be able to

PO-01: Employability : Acquire basic knowledge and employability skills in the field of management, accounting, operations, marketing and human relations through the theoretical and practical knowledge obtained from internship and project work as part of the curriculum.

PO-02: Problem Solving and Challenge facing: Cope up with the unique physical and physiological challenges of the healthcare sector and hospital administration.

PO-03: Learning & Applying :Comprehend applicability of management principles to the real-life situations in global healthcare industry.

PO-04: Ethics and Governance: Develop legal value and ethical standards for the continuous development of the healthcare industry.

PO-05: Critical Thinking and Decision Making: Demonstrate critical thinking ability and decision-making skills in dealing with emergency situations in the healthcare industry.

PO-06 : Interpersonal and Communication skills :Inculcate interpersonal skills, communication skills, ability to work as a team member and engage in life-long learning.

Program Specific Outcomes (PSO)

On completion of BBA (Healthcare Management) the graduate will be able to:

PSO-01: Apply healthcare practices, policies and theories by following scientific approach to knowledge development in real life situations for the wellbeing of the society.

PSO-02: Empathetically understand and provide patient care with resilience.

PSO-03: Proactively tackle everyday crisis in the healthcare sector.

PSO-04: Record and analyse information related to healthcare in a clear and concise manner to enable decision making in the organisation.

PSO-05: Demonstrate innovative leadership skills to meet the needs of the healthcare industry.

PSO-06: Remember norms and standards for accreditation of Health Care Organization and adopt means of evaluation of structures and processes of health services in order to improve the quality of health care in the organisation.

PSO-07: Comprehend Professional Consultancy in the field of Health System Management, Quality & Accreditation, Health Technology Assessment, Medical Tourism, Disaster Management, Health Care Delivery Organization, Public Health Facilities & Services for overall improvement of the facilities.

PSO-08: Demonstrate the subject knowledge in order to prepare Manuals, Literature and Books on Health Care Management, Quality & Accreditation, Health Care Technology, Health Care Industry related subjects, Text Books for Health Management Courses for the benefit of Students & Faculty, Hospital and Health Care organizations and Academic Institutions.

NEP Curriculum Framework: BBA (Healthcare & Hospital Management)

Semester-wise Subject Details											
SEMESTER	No. of:	MC	ME	NM	NV	MDC	AEC	SEC	VAC	INT/PROJ	TOTAL
1	Subje ^{ts}	2		1	2		1	1	1		8
	Credits	8		4	2		2	3	2		21
2	Subje ^{ts}	4			2	1	1	1	1		10
	Credits	16			2	3	2	3	2		28
AFTER 1 YEAR OF UG CERTIFICATE										Total no. of Subje ^{ts}	18
										Total no. of Credits	49
SEMESTER	No. of:	MC	ME	NM	NV	MDC	AEC	SEC	VAC	INT/PROJ	TOTAL
3	Subje ^{ts}	3		1	2	1	1				8
	Credits	13		4	2	3	2				24
4	Subje ^{ts}	3		1	2	1	1				8
	Credits	13		4	2	3	2				24
AFTER 2 YEARS OF UG DIPLOMA										Total no. of Subje ^{ts}	34
										Total no. of Credits	97
SEMESTER	No. of:	MC	ME	NM	NV	MDC	AEC	SEC	VAC	INT/PROJ	TOTAL
5	Subje ^{ts}	4			2			1	1		8
	Credits	16			2			3	2		23
6	Subje ^{ts}	4		1	2					1	8
	Credits	16		4	2					3	25
AFTER 3-YEARS OF UG DEGREE										Total no. of Subje ^{ts}	50
										Total no. of Credits	145
SEMESTER	No. of:	MC	ME	NM	NV	MDC	AEC	SEC	VAC	INT/PROJ	TOTAL
7	Subje ^{ts}	3		1							4
	Credits	12		4							16
8	Subje ^{ts}	2	3							1	5
	Credits	8	12							12	20
AFTER 4-YEARS UG HONOURS DEGREE/ 4-YEARS UG HONOURS WITH RESEARCH DEGREE										Total no. of Subje ^{ts}	59
										Total no. of Credits	181

MC: Major Program Specific Course – Compulsory

ME: Major Program Specific Course – Elective

NM: Non-Major Specific Subject Course

NV: Non-Major vocational education and training

MDC: Multidisciplinary courses

AEC: Ability Enhancement Courses

SEC: Skill Enhancement Courses

VAC: Value Added Courses

INT: Internship

PROJ: Project

Semester 7

Major Compulsory	Major Elective	Non-major	Non-major Vocational	Multidisciplinary	Ability Enhancement	Skill Enhancement	Value Added	Internship / Project	Total
Epidemiology and Biostatistics (4)		Psychology for Business (4)							16
Hospitals Waste Management (4)									
Disaster Management (4)									

Semester 8

Major Compulsory	Major Elective	Non-major	Non-major Vocational	Multidisciplinary	Ability Enhancement	Skill Enhancement	Value Added	Internship / Project	Total
Social Medicine and Community Health (4)	Geriatric Healthcare (4)							Research Project & Dissertation (12)	20
Digital Health and AI in Healthcare (4)	Health Insurance (4)								
	Hospitals Materials Management (4)								
	International Health System (4)								

Subject: Principles of Management

Semester: 1

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Syllabus

Module-I: Management Introduction

Fundamental Concepts of Management; Characteristics & Features of Management; Objectives of Management; Significance of Management; Management as a Science or as an Art, Concept, process; An overview of Functional Areas of Management – Main Functions of Management; Fundamental Principles of Management; Evolution of management Thoughts; Classical Theory Management; Neo-classical Theory of Management; Contingency approaches; Concepts of Scientific Management; Concept of Administrative Management; Henri Fayol 14th Principle of Management; Difference between Management & Administration; Levels of Management; Roles of a Manager; Significance of Management; Limitations of Management; 5M's of Management , POSDCORB.

Module-II: Planning & Forecasting

Planning: Fundamental Concept of Planning, Characteristics & Features of Planning, Importance & Significance of Planning; Steps involved in the Planning Process; MBO (Management by Objectives); Essential of a Good Plan; Limitations of Planning.

Forecasting: Fundamental Concept & Meaning of Forecasting; Importance of Forecasting; Elements & Steps in Forecasting Process and Limitations of Forecasting; Difference between Planning & Forecasting.

Module-III: Decision-making

Concepts of Decision-making Theory; Characteristics & Types of Decision making; Decision-making Procedures; Types of Decision-making theories; Concept of Bad Decision Making; Causes & Effects of Bad Decision Making on the Management.

Module-IV: Organizing

Fundamental Meaning and Concept of Organization; Characteristics & Nature of Organization; Principles of Organization; Significance of Organization; Meaning of Responsibility, Authority & Accountability; Delegation of authority; Principles of Delegation of Authority; Advantages and Benefits of Delegation of Authority; Barriers in Effective Delegation of Authority; Span of control; Formal and informal groups in Organizations; Matrix Organization.

Module-V: Staffing

Definition of Staffing; Elements of Staffing; Manpower Planning; Recruitment; Selection; Induction; Training & Development; Performance Appraisal; Career Planning & Succession Planning.

Module-VI: Industrial Dispute & Disciplinary Actions

Fundamental Concept of Industrial Dispute & types of Industrial Dispute; Industrial Dispute Resolution; Fundamental Concepts of Industrial Discipline & Disciplinary Action; Types of Disciplinary actions; Types of termination process with reference to the Disciplinary actions; Differences Between Discharge & Dismissal.

Module-VII: Controlling & Co-ordination

Concept & Meaning of Control ; Features & Characteristic of Controlling; Elements of Controlling Process / Steps In Controlling ; Types of Control ; Essentials of an effective control system ; Importance of Controlling ; Scope & Areas of Control ; Essential Requirements of an Effective Control System ; Limitations of Controlling ; Fundamental concept of Co-ordination ; Features & Characteristics of Co-ordination ; Principles of Co-ordination ; Techniques of achieving co-ordination ; Steps In Co-ordination Process ; Problems of Co-ordination.

Module-VIII: Motivation

Concept, Significance; Motivational theories - Hierarchy of Human Needs by Maslow's, Theory X & Theory Y, Hygiene Motivation – Herzberg Two Factor Theory, Vroom Expectancy theory.

Module-IX: Leadership Style

Fundamental concept of Leader; Qualities of a Good Leader Differences between Leader and a Manager; Leadership Styles; Leadership theories; Managerial Grid of Leadership Theory.

Module-X: Stress

Fundamental Concept of Stress; Types of Stress; Causes & Effects of Stress; Stress-Burnout phenomenon.

Suggested Readings:

1. Harold Koontz and Heinz Weihrich - Essentials of management 10th ed. Chennai: Tata McGraw Hill Education, 2015
2. V.S.P Rao & Hari Krishna: Management-Text & Cases, Excel Books
3. Ramaswami T: Principles of Mgmt., Himalaya Publishing
4. Chandan, J. S: Management – Concepts and Strategies, Vikas Publishing
5. Dipak Kumar Bhattacharyya: Principles of Management - Text and Cases, Pearson.

6. Robbins, S. P: Management, Prentice Hall.
7. Prasad L.M.; Principles and Practice of Management, Sultan Chand & Sons, 2020

Course Outcome (CO)

CO #	Description
CO -1	Understand the management concepts and importance of the Management theories.
CO-2	Understand and apply the current and relevant management functions in the life.
CO-3	Demonstrate the decision-making skills, communication skills and its relevance in their life.
CO-4	Analyze and evaluate various motivational theories and Leadership theories in achieving organizational success.

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Understand the management concepts and importance of the Management theories.	1,2,3,4,5,6	1,2,3,4,5,6,8
CO-2	Understand and apply the current and relevant management functions in the life.	1,2,3,4,6	1,2,3,4,6,7,8
CO-3	Demonstrate the decision-making skills, communication skills and its relevance in their life.	1,2,3,4,5,6	1,2,3,4,5,6,7,8
CO-4	Analyze and evaluate various motivational theories and Leadership theories in achieving organizational success.	1,2,3,4,5,6	1,2,4,5,6,7,8

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	1	3	2	1	2	1
CO 2	3	1	3	3	-	3
CO 3	1	2	3	3	1	3
CO 4	2	1	1	2	3	3
Average	1.75	1.75	2.25	2.25	2.00	2.50

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	2	1	2	1	2	2	-	2
CO 2	3	3	2	2	-	3	3	3
CO 3	2	3	3	3	2	2	2	3
CO 4	2	2	-	2	3	2	2	3
Average	2.25	2.25	2.33	2.00	2.33	2.25	2.33	2.75

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Business Microeconomics

Semester: 1

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Syllabus

Module-I: Consumer Behaviour

1. Introduction: Basic Problems of an Economy, Working of Price Mechanism and Resource Allocation. [3L]
2. Consumer Behaviour: Law of Demand and its determinants; Cardinal and Ordinal Utility Analysis and determination of Consumer equilibrium. [2L]
3. Elasticity of Demand: Concept and Measurement of Elasticity of Demand, Price, Income and Cross Elasticities [4L]
4. Average Revenue: Marginal Revenue, and Elasticity of Demand, Determinants of Elasticity of Demand. [3L]

Module-II: Production and Cost

5. Production Function: Law of Variable Proportions, Ridge Lines. Isoquants, Economic Regions and Optimum Factor Combination. Expansion Path, Returns of Scale, International and External Economies and Diseconomies of Scale. [6L]
6. Theory of Costs: Short-Run and Long Run Cost Curves [4L]

Module-III: Price and output determination in different market structure

7. Perfect Competition: Characteristics, Profit Maximization and Equilibrium of Firm and Industry, Short Run and Long Run Supply Curves, Price and Output Determination, Practical Applications. [9L]
8. Monopoly: Characteristics, Determination of Price under monopoly, Equilibrium of a Firm, Comparison Between Perfect Competition and Monopoly, Price Discrimination, Social Cost of Monopoly. [6L]
9. Monopolistic Competition: Meaning and Characteristics, Price and Output Determination Under Monopolistic Competition, Product Differentiation, Selling Costs, Comparison with Perfect Competition, Excess Capacity Under Monopolistic Competition. [5L]
10. Oligopoly: Characteristics, Indeterminate Pricing and Output, Cournot Model of Oligopoly, Price Leadership, Collusive Oligopoly [6L]

Module-IV: Factor Pricing

11. Factor Pricing: Marginal Productivity Theory and Demand for Factors [6L]
12. Concept of Rent: Ricardian and Modern Theories of Rent; Quasi-Rent. [3L]
13. Concept of Labour: Wage Rate, Nominal Wage, Real Wage. [1L]
14. Concept of Capital: Gross Interest, Net Interest, Zero Interest Rate. [1L]
15. Concept of Profit: Pure Profit, Normal Profit, Abnormal Profit. [1L]

Suggested Readings

1. Panchanan Das, Anindita Sengupta-Economics I: Oxford.
2. S. Mukherjee, M. Mukherjee & A. Ghose: Microeconomics, Prentice-Hall.
3. Koutsoyianni: Modern Micro-Economics, Macmillan

Course Outcome (CO)

CO #	Description
CO -1	Acquaint with the fundamental knowledge of Micro-Economics and its basic laws and principles.
CO-2	Understand the theories of demand and supply and practically identify the different factors that affect demand and supply
CO-3	Understand analyze the different types of costs that form part of a production process and relate it with the laws of production.
CO-4	Understand and evaluate the different types of markets operating in an industry

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Acquaint with the fundamental knowledge of Micro-Economics and its basic laws and principles.	1,2,3,4,5,6	1,2,3,4,5,6,7,8
CO-2	Understand the theories of demand and supply and practically identify the different factors that affect demand and supply	1,2,3,5,6	1,2,3,4,5,6,7,8
CO-3	Understand analyze the different types of costs that form part of a production process and relate it with the laws of production.	1,2,3,4,5,6	1,2,3,4,5,6,7,8
CO-4	Understand and evaluate the different types of markets operating in an industry	1,2,3,4,5,6	1,2,3,4,5,6,7,8

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	1	3	2	1	2	1
CO 2	3	1	3	-	1	3
CO 3	1	2	2	3	1	3
CO 4	2	1	1	2	3	3
Average	1.75	1.75	2.00	2.00	1.75	2.50

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	2	1	2	1	1	3	3	3
CO 2	2	1	2	2	2	3	3	2
CO 3	2	2	3	2	2	1	1	2
CO 4	1	2	2	2	3	1	1	1
Average	1.75	1.50	2.25	1.75	2.00	2.00	2.00	2.00

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Business Mathematics & Statistics

Semester: 1

Subject Category: NM

Credit: 4 (L: 3, T: 1)

Syllabus

Module-I:

Matrices: Definition of a matrix. Types of matrices. Algebra of matrices. Applications of matrices operations for solution to simple business and economic problems. (6 Sessions)

Module-II

Differential Calculus: Mathematical functions and their types – linear, quadratic, polynomial. Concept of differentiation. Rules of differentiation – simple standard forms. Applications of differentiation – elasticity of demand and supply. (6 Sessions)

Module-III

Basic Mathematics for Finance: Simple AP and GP Series, Simple and compound interest. Rates of interest – nominal, effective and continuous – and their inter-relationships. Compounding and discounting of a sum using different types of rates. Ratio and proportion. (8 Sessions)

Module-IV:

Univariate Analysis: Introduction, Functions of Classification, Frequency and Frequency Distribution, Construction of frequency distribution, Presentation of Data – Diagrams, Graphical Presentation, Histogram, Frequency polygon, Ogives. Mode and Median, Box-plots, Measures of Central Tendency, Dispersion, Skewness & Kurtosis. Correlation and Simple Linear Regression. Probability. Set theory (20 Sessions)

Suggested Readings:

1. ND Vohra, Business Mathematics and Statistics, McGraw Hill Education (India) Pvt. Ltd.
2. ET Dowling, Mathematics for Economics, Schaum's Outlines Series, McGraw hill Pub. Co.
3. JK Sharma, Business Statistics, Pearson Education.

Course Outcome (CO)

CO #	Description
CO -1	Have a practical understanding of set theory, logical statements and truth tables, linear, quadratic and polynomial equations.
CO-2	Have a practical understanding of use of Matrices
CO-3	Understand statistical techniques popularly used to describe the data in managerial decision making.
CO-4	Apply appropriate quantitative technique according to nature of data.
CO-5	Learn the computational skill, interpretation of results of the data analysis.
CO-6	Analyse and differentiate various types of data distribution and its probability distribution.
CO-7	Know the procedure involved in inferential statistics and appropriate tests for given data.

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Have a practical understanding of set theory, logical statements and truth tables, linear, quadratic and polynomial equations.	1,2,3,4,5,6	1,2,3,4,5,6,7,8
CO-2	Have a practical understanding of use of Matrices	1,2,3,4,5,6	1,2,4,5,6,7,8
CO-3	Understand statistical techniques popularly used to describe the data in managerial decision making.	1,2,4,5,6	1,2,3,4,5,6,7,8
CO-4	Apply appropriate quantitative technique according to nature of data.	1,2,3,4,5,6	1,2,3,4,5,6,7,8
CO-5	Learn the computational skill, interpretation of results of the data analysis.	1,2,3,4,6	1,2,3,4,5,7,8
CO-6	Analyse and differentiate various types of data distribution and its probability distribution.	1,2,3,4,5,6	1,2,3,4,5,6,7,8
CO-7	Know the procedure involved in inferential statistics and appropriate tests for given data.	1,2,3,4,5,6	1,2,3,4,5,6,7,8

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	2	1	2	3	1	2
CO 2	1	2	2	2	3	1
CO 3	1	3	-	1	1	1
CO 4	1	3	2	2	1	3
CO 5	3	2	2	1	-	3
CO 6	1	1	1-	1	2	2
CO 7	2	2	2	1	3	3
Average	1.57	2.00	1.83	1.57	1.83	2.14

1: (Slightly Low) 2: Moderate (Medium)- 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	3	3	3	2	1	3	2	1
CO 2	1	1	-	2	3	3	2	3
CO 3	3	2	2	2	3	2	1	1
CO 4	3	3	3	3	3	3	2	1
CO 5	3	2	2	3	3	-	2	3
CO 6	1	3	1	1	2	2	2	1
CO 7	3	1	3	2	3	3	3	3
Average	2.43	2.14	2.33	2.14	2.57	2.67	2.00	1.86

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Communicative English-I

Semester: 1

Subject Category: AEC

Credit: 2 (L: 1, T: 1)

Syllabus

Module-I: Basics of the Theory of Communication

- Types and modes of Communication
- Understanding what are the barriers to Communication
- Knowledge about Intra-personal, Inter-personal and Group communication

Module-II: Development of Listening and Speaking Skills

- Appreciating Effective Communication
- Miscommunication
- Usage of Dialogue

Module-III: Writing Skills

- Basic Grammar
- Letter Writing

Module-IV: Training in Reading and Comprehension

- How to Summarise a text
- Effective Paraphrase
- Precis writing

Suggested Readings:

1. Fluency in English - Part II, Oxford University Press, 2006.
2. Business English, Pearson, 2008.
3. Language, Literature and Creativity, Orient Blackswan, 2013.
4. Language through Literature (forthcoming) ed. Dr. Gauri Mishra, Dr. Ranjana Kaul, Dr. Brati Biswas

Course Outcome (CO)

CO #	Description
CO -1	Comprehend both the written and spoken texts
CO-2	Develop the listening and speaking skills
CO-3	Develop the ability to write a paragraph around a topic
CO-4	Improve reading and comprehension skill
CO-5	Participate in short group conversations.

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Comprehend both the written and spoken texts	1,2,4,5,6	1,2,3,4,5,6,7,8
CO-2	Develop the listening and speaking skills	1,3,5,6	1,3,5,6,7,8
CO-3	Develop the ability to write a paragraph around a topic	1,2,3,5,6	1,2,4,5,6,7,8
CO-4	Improve reading and comprehension skill	1,2,3,4,5	1,2,3,5,6,7,8
CO-5	Participate in short group conversations.	1,2,3,4,6	2,3,4,5,6,7,8

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	2	2	-	3	3	1
CO 2	2	-	3	-	3	1
CO 3	3	3	2	-	2	3
CO 4	2	2	3	2	3	-
CO 5	3	2	3	1	-	3
Average	2.40	2.25	2.75	2.00	2.75	2.00

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	3	2	3	2	3	3	3	3
CO 2	2	-	3	-	2	2	2	3
CO 3	3	3	-	3	1	3	2	1
CO 4	2	3	2	-	3	2	3	3
CO 5	-	2	3	1	3	3	2	2
Average	2.50	2.50	2.75	2.00	2.40	2.60	2.40	2.40

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Computer Applications

Semester: 1

Subject Category: SEC

Credit: 3 (L:2, T:1)

Syllabus

Module-I: Basic Computer Concepts

Computer and Its Characteristics, Basic Block Diagram of Computer System, First Generation, Second Generation, Third Generation, Fourth Generation, Fifth Generation, Modern Taxonomy of Computers, Mini Computer, Micro Computer, Mainframe Computer, Super Computer, Laptop, Keyboard, Mouse, Light Pen, Barcode Readers, Scanners, MICR, OCR, Voice Recognition and Handwriting Recognition Systems, Visual Display Terminals, Printers, Plotters, Primary Storage – RAM, ROM, EEROM, PROM, EPROM, Secondary Storage – Direct Access Devices, Serial Access Devices: Hard Disks, CD-ROM, DVD, Cache Memory, Virtual Memory, Control Unit, Arithmetic and Logic Unit, Decoders, Registers, Machine Instructions, Stored Program Concept, Program Execution: Fetch-Decode-Execute Cycle, Arithmetic, Logical and Shift Operations.

Module-II: Computer Software

Meaning of Software, Broad Classification of Software, System Software, Application Software, Utilities. Operating Systems: Basic Idea of Operating System (OS) - DOS, Windows, Unix, Linux, Functions of OS, OS As a Resource Manager – Memory Management, Input /Output Management, Secondary Storage Management, Program Management, Network Management, Application Packages.

Module-III: Word Processing Software

Microsoft Word 2007/10/13: The different functionalities in the Microsoft Word Software 2007/10/13, Creation of a New Document, Editing an Existing Document, Saving and Printing a File, Use of the Different Ribbon Tab and Tools, Handling Tables in MS Word 2007, Mail Merge, Macro.

Module-IV: Spreadsheet Software

Microsoft Excel 2007/10/13: Creating a New Spreadsheet Document, Editing an Existing Document, Saving Spreadsheet in Different Formats, Validation of data in Fields, Different Tools Available in MS Excel 2007/10/13 Ribbon Tabs, Performing Mathematical Calculations (using Formula and Functions), Searching, Sorting and Filtering, Min Media Mode, Reference Operators, Functions: Typing a Function, Creating a

Column Chart: Changing the Size and Position of a Chart Saving a File in Microsoft Excel, Closing a Microsoft Excel Worksheet, Formatting Excel Worksheet for printing.

Module-V: Presentation Software

Microsoft PowerPoint 2007/10/13: The Different Functionalities of Microsoft PowerPoint 2007/10/13, Creating a PowerPoint Presentation, Creating and Inserting a New Slide, Creating a Title Slide; Applying a Design Template. Creating a Hierarchy, Using a Two-Column Text, Slide Sorter View, Running the Slide Show, Printing the Slides, Slide Transition and Custom Animation.

Module-VI: DBMS Software

MS Access 2007/10/13: Creating New and Opening Existing Databases, Creating a Database, Forms, /Query, Reports Using a Wizard, Relationships - How to Link Multiple Tables Together.

Suggested Readings:

1. Leon, Introduction to Computers with MS-Office 2007, TMH
2. Step by Step (Microsoft Office System) 2007 Edition, Prentice -Hall of India
3. P.K.Sinha - Computer Fundamentals, BPB Publication.
4. V.Rajaraman -Fundamentals of Computers, PHI, Sixth Edition

Course Outcome (CO)

CO #	Description
CO -1	Explain the fundamental concepts of computer concept and software
CO-2	Comprehend various functionalities of Word Processing Software
CO-3	Understand syntaxes and functionalities of the Spreadsheet Software
CO-4	Learn the application of Presentation Software
CO-5	Understand the use of DBMS software

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Explain the fundamental concepts of computer concept and software	1,2,3,4,5,6	1,2,3,4,5,6,7,8
CO-2	Comprehend various functionalities of Word Processing Software	1,2,3,4,5,6	1,2,3,4,5,6,7,8
CO-3	Understand syntaxes and functionalities of the Spreadsheet Software	1,2,3,4,5,6	1,2,3,4,5,6,7,8
CO-4	Learn the application of Presentation Software	1,2,3,4,5,6	1,2,3,4,5,6,7,8
CO-5	Understand the use of DBMS software	1,2,3,4,5,6	1,2,3,4,5,6,7,8

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	2	2	3	3	3	1
CO 2	2	2	3	3	3	1
CO 3	3	3	2	3	2	3
CO 4	2	2	3	2	3	3
CO 5	3	2	3	1	2	3
Average	2.40	2.20	2.80	2.40	2.60	2.20

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	3	2	3	2	3	3	3	3
CO 2	2	3	3	2	2	2	2	3
CO 3	3	3	3	3	1	3	2	1
CO 4	2	3	2	2	3	2	3	3
CO 5	2	2	3	1	3	3	2	2
Average	2.40	2.60	2.80	2.00	2.40	2.60	2.40	2.40

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

Subject: Environment Science-I

Semester: 1

Subject Category: VAC

Credit: 2 (L: 1, T: 1)

Syllabus:

Module-I: Introduction to environmental studies

Multidisciplinary nature of environmental studies; Scope and importance; the need for environmental education. Concept of sustainability and sustainable development. (4 sessions)

Module-II: Ecosystems

Definition of ecosystem; Structure: food chains, food webs and function of ecosystem: Energy flow in an ecosystem, nutrient cycle and ecological succession. Ecological Interactions; Explanation of Forest ecosystem, Grassland ecosystem, Desert ecosystem and Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries) (5 sessions)

Module-III: Biodiversity and Conservation

Levels of biological diversity: genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots; India as a mega-biodiversity nation; Endangered and endemic species of India; Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity: *In-situ and Ex-situ* conservation of biodiversity; Nature reserves, tribal populations and rights and human wildlife conflicts in Indian context; Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value. (5 sessions)

Module-IV: Environmental Pollution and Global Environmental Issues

Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution. Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture; Nuclear hazards and human health risks (Chernobyl, 3-mile Island, Daiichi-Fukushima); Solid waste management: Control measures of urban and industrial waste, special reference e-waste, Biomedical waste; Pollution Tragedies: Love canal, Bhopal Gas, Endosulfan, Minamata and Flint water (6 sessions)

Suggested Readings

Text Books:

1. **Basu, M. and Xavier, S.**, Fundamentals of Environmental Studies, Cambridge University Press, 2016.
2. **Mitra, A. K and Chakraborty, R.**, Introduction to Environmental Studies, Book Syndicate, 2016.
3. **Enger, E. and Smith, B.**, Environmental Science: A Study of Interrelationships, Publisher: McGraw-Hill Higher Education; 12th edition, 2010.
4. **Basu, R.N.**, Environment, University of Calcutta, 2000.

Reference Books:

1. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India* Univ. of California Press.
3. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
4. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. Environmental and Pollution Science. Academic Press.
5. Agrawal, KM, Sikdar, PK and Deb, SC, A Text book of Environment, Macmillan Publication, 2002.
6. Richard T Wright, Environmental Science: Towards a Sustainable Future, Prentice-Hall Inc., 2008.

Course Outcome (CO)

CO #	Course Outcomes (CO)
CO -1	Articulate the interconnected and interdisciplinary nature of environmental studies;
CO-2	Demonstrate an integrative approach to environmental issues with a focus on sustainability;
CO-3	Use critical thinking, problem-solving, and the methodological approaches of the social sciences, natural sciences, and humanities in environmental problem solving;
CO-4	Communicate complex environmental information to both technical and non-technical audiences;
CO-5	Understand and evaluate the global scale of environmental problems; and
CO-6	Reflect critically on their roles, responsibilities, and identities as citizens, consumers and environmental actors in a complex, interconnected world.

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Articulate the interconnected and interdisciplinary nature of environmental studies;	1,2,3,4,6	1,2,3,4,5,8
CO-2	Demonstrate an integrative approach to environmental issues with a focus on sustainability;	1,2,3,4,6	1,2,4,5,6,7,8
CO-3	Use critical thinking, problem-solving, and the methodological approaches of the social sciences, natural sciences, and humanities in environmental problem solving;	1,2,3,4,5,6	1,2,3,6,7,8
CO-4	Communicate complex environmental information to both technical and non-technical audiences;	1,2,3,4,6	1,2,3,4,6,7,8
CO-5	Understand and evaluate the global scale of environmental problems; and	2,3,5,6	2,3,4,6,7,8
CO-6	Reflect critically on their roles, responsibilities, and identities as citizens, consumers and environmental actors in a complex, interconnected world.	2,3,4,5,6	1,2,4,5,6,7,8

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	2	3	2	1	-	1
CO 2	1	1	3	2	-	2
CO 3	3	1	2	1	1	2
CO 4	2	2	2	3	-	3
CO 5	-	2	2	-	1	1
CO 6	-	2	1	1	1	3
Average	2.00	1.83	2.00	1.60	1.00	2.00

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	1	3	2	3	3	-	-	3
CO 2	3	1	-	1	3	2	2	1
CO 3	1	1	2	-	-	3	2	1
CO 4	1	2	2	3	-	1	3	3
CO 5	-	3	2	2	-	1	3	1
CO 6	3	3	-	3	1	3	2	2
Average	1.80	2.17	2.00	2.40	2.33	2.00	2.40	1.83

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Marketing Management

Semester: 2

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Syllabus

Module I

1. Introduction: Definitions of marketing; Core Concept of Marketing – need, want, demand, FAB approach; Value creation, delivery and communication; Evolution of marketing concepts (orientations); Marketing Mix – 4 P's, 4 A's and 4 C's; Product classification
2. Marketing Environment: Analyzing macro-environment; SWOT Analysis, PESTEL / STEEPLE Analysis
3. Strategy and Planning: Porter's Generic Value Chain; Porter's Five Force Model for Industry Analysis Concept of SBU, Cho; Strategic Planning – Corporate Level, Business Unit Level, Marketing Department Level; Formulation of Corporate Strategy - Stability, Expansion, Retrenchment and Combination strategies; Ansoff's Product-Market Grid, Porter's Generic Strategy; BCG matrix; GE matrix

Module II

4. Market Segmentation, Targeting and Positioning (STP): Concepts of market segmentation: Various bases for segmentation: Geographic, Demographic, Psychographic and Behavioural; Targeting: Mass marketing, Segment Marketing, Niche Marketing, Micro Marketing and Customization; Concept of Differentiation and Positioning.
5. Consumer Behaviour and Marketing Research: A framework of consumer decision making process, overview of major factors influencing consumer behaviour; marketing research: Role in decision making, Steps and process of Marketing Research

Module III

6. Product: Product Classification, Service – characteristics and expanded service mix elements; Product Levels, Product Mix, Product Line Management, Product Life Cycle: concept and types, New Product Development.

7. Branding and Packaging: Purpose of branding; Brand equity; Branding strategies; Purpose of Packaging; Types of Packaging, Materials of Packaging; Labelling.
8. Pricing: Procedure for price setting; Pricing objectives; Cost and Demand consideration; Pricing Methods, Pricing Strategies

Module IV

9. Place: Channel flows and functions; Channel design decisions; Wholesaling and Retailing, Concept of Supply Chain Management and Logistics Management, Channel Conflict Management
10. Promotion: Elements of Promotion Mix (Advertising, Sales Promotion, Personal Selling, Direct Marketing, Publicity & PR), 5M model of Advertising, Concept of Digital Marketing; Overview of Selling Process

Suggested Reading:

1. Marketing Management; Kotler, P., Keller, K., Koshy, A. & Jha, M.; Pearson
2. Marketing Management; Datta, D & Datta, M; Vrinda Publications
3. Marketing Management; Ramaswamy & Namakumari; McMillan
4. Marketing Management; Saxena, R.; TMH
5. Principles of Marketing; Kurtz, David L, Boone , Louis E; Thomson

Course Outcome (CO)

CO #	Description
CO -1	Analyse the confluence of marketing, operations, and human resources in real-time delivery.
CO-2	Demonstrate cognitive knowledge of the skills required in conducting online research and research on online markets, as well as in identifying, assessing and selecting digital market opportunities.
CO-3	Explain emerging trends in digital marketing and critically assess the use of digital marketing tools by applying relevant marketing theories and frameworks.
CO-4	Investigate and evaluate issues in adapting to globalized markets that are constantly changing and increasingly networked.
CO-5	Comprehend the importance of conversion and working with digital environment
CO-6	Analyse cross-cultural and ethical issues in globalised digital markets.

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Analyse the confluence of marketing, operations, and human resources in real-time delivery.	1,2,3,4,6	1,2,3,4,5,8
CO-2	Demonstrate cognitive knowledge of the skills required in conducting online research and research on online markets, as well as in identifying, assessing and selecting digital market opportunities.	1,2,3,4,6	1,2,4,5,6,7,8
CO-3	Explain emerging trends in digital marketing and critically assess the use of digital marketing tools by applying relevant marketing theories and frameworks.	1,2,3,4,5,6	1,2,3,6,7,8
CO-4	Investigate and evaluate issues in adapting to globalized markets that are constantly changing and increasingly networked.	1,2,3,4,6	1,2,3,4,6,7,8
CO-5	Comprehend the importance of conversion and working with digital environment	2,3,5,6	,23,4,6,7,8
CO-6	Analyse cross-cultural and ethical issues in globalised digital markets.	2,3,4,5,6	1,2,4,6,7,8

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	2	3	2	1	-	1
CO 2	1	1	3	2	-	2
CO 3	3	1	2	1	1	2
CO 4	2	2	2	3	-	3
CO 5	-	2	2	-	1	1
CO 6	-	2	1	1	1	3
Average	2.00	1.83	2.00	1.60	1.00	2.00

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	1	3	2	3	3	-	-	3
CO 2	3	1	-	1	3	2	2	1
CO 3	1	1	2	-	-	3	2	1
CO 4	1	2	2	3	-	1	3	3
CO 5	-	3	2	2	-	1	3	1
CO 6	3	3	-	3	1	3	2	2
Average	1.80	2.17	2.00	2.40	2.33	2.00	2.40	1.83

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Business Macroeconomics

Semester: 2

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Syllabus

Module I:

1. Introduction: Basic Introduction to Macroeconomics. Concept of Aggregate Demand and Aggregate Supply, Marginal Propensity to Consume (MPC), APC, MPS, MPI: Basic Definition Only, Paradox of thrift [4L]
2. National Income: Concepts and Definitions, Gross National Product (GNP), Gross Domestic Product (GDP), Net National Product and Net Domestic Product, Personal Income, Disposable Income and Per Capita Income, Measurement of National Income, Factors That Determine Size of National Income, Double Counting and The Concept of Value Added, Underground Economy, Real and Nominal GNP, Deflator. [5L]

Module II:

3. Monetary Economics: Evolution of Money, Functions of Money, Bank and its Functions, Indian Money Market, Different Concepts of Money Like M1, M2, M3, M4. [4L]
4. Concept of Inflation: Definition of Inflation, Types of Inflation, Effects of Inflation, Anti-Inflationary Measures. [3L]
5. Banks: Commercial Banks – Need and Functions, Credit Creation of Commercial Banks. Reserve Bank of India – Need and Functions, Credit Control Policy. Co-Operative Banks: Need and Role in an Economy. [4L]

Module III:

6. Public Revenue: Concept of Taxes, Sources of Revenue of Central and State Government, GST, CGST, SGST (only definition). [4L]
7. Public Expenditure: Types of Public Expenditure, Its Need Role and Importance. [3L]
8. Public Debt: Types of Public Debt, Need for Public Debt, Redemption of Public Debt. [3L]
9. Deficit Financing: Role and Importance. [4L]
10. Budget: Need and Types, Concept of Different Types of Deficit (Revenue Deficit. Budgetary Deficit, Fiscal deficit and Primary Deficit [5L]

Module IV:

11. International Trade and Finance: Need for international trade, Absolute and Comparative Cost Advantage Theory, Gains from international trade, Terms of Trade [4L]
12. Balance of Payments: Items of BOP, Causes of Disequilibrium in BOP, Strategies to Correct Adverse BOP Situation, Purchasing Power Parity Theory [4L]
13. Exchange Rate Mechanism: Definition, Ask Rate, Bid Rate, Spot Rate, Forward Rate, Currency Spread [5L]
14. International Financial Institutions: International Monetary Fund (IMF), International Bank for Reconstruction and Development (IBRD), Asian Development Bank [4L]
15. Concept of Business Cycle: Different Phases and their basic characteristics [4L]

Suggested Readings:

1. H. L. Ahuja: Macroeconomics Theory and Policy, S. Chand.
2. Panchanan Das, Anindita Sengupta: Economics II, Oxford.
3. Errol D'Souza: Macroeconomics, 2/e, Pearson.
4. Debes Mukherjee: Essentials of Micro and Macro Economics, Central
5. M. L. Jhingan: Macro Economic Theory, Vrinda
6. Mankiw: Principles of Macroeconomics, Cengage Learning

Course Outcome (CO)

CO #	Description
CO -1	Explain the concepts of gross domestic product, inflation and unemployment, and how they are measured.
CO-2	Comprehend the circular flow model and use the concepts of aggregate demand and aggregate supply to analyze the response of the economy to disturbances.
CO-3	Describe the determinants of the demand for money, the supply of money and interest rates and the role of financial institutions in the economy.
CO-4	Define fiscal and monetary policies and how these affect the economy.
CO-5	Identify the causes of prosperity, growth, and economic change over time and explain the mechanisms through which these causes operate in the economy

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Explain the concepts of gross domestic product, inflation and unemployment, and how they are measured.	1,2,3,4,5,6	1,2,3,4,5,6,8
CO-2	Comprehend the circular flow model and use the concepts of aggregate demand and aggregate supply to analyze the response of the economy to disturbances.	1,3,4,5,6	1,2,3,4,5,6,7,8
CO-3	Describe the determinants of the demand for money, the supply of money and interest rates and the role of financial institutions in the economy.	1,2,4,5,6	1,2,3,5,6,7,8
CO-4	Define fiscal and monetary policies and how these affect the economy.	1,2,3,4,6	1,2,3,4,5,7,8
CO-5	Identify the causes of prosperity, growth, and economic change over time and explain the mechanisms through which these causes operate in the economy	1,2,3,4,6	1,2,3,4,7,8

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	2	1	2	3	2	2
CO 2	3	-	3	2	3	3
CO 3	2	3	-	2	3	2
CO 4	3	3	2	3	-	3
CO 5	3	2	2	1	-	3
Average	2.60	2.25	2.25	2.20	2.67	2.60

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	3	3	3	2	1	3	-	2
CO 2	3	2	3	2	3	2	2	1
CO 3	3	2	2	-	1	0	2	2
CO 4	3	3	3	3	3	-	3	3
CO 5	3	2	2	3	-	-	0	1
Average	3.00	2.40	2.60	2.50	2.00	1.67	1.75	1.40

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Medical Terminology

Semester: 2

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Subject Code:

Syllabus

Module-I: Basics of Prescription Writing

- Common Latin Terms used in prescriptions
- Study of standard abbreviations used in prescriptions
- Common abbreviations used in different departments of the hospital

Module-II: Basics of Medical Terminology

- Commonly used root words in medical terminology
- Commonly used prefixes in medical terminology
- Commonly used suffixes in medical terminology
- Commonly used medical terms to define various parts of the body
- Social determinants of Health

Module-III: Fundamentals of Anatomy & Physiology of various systems in Human Body

- Digestive system
- Cardio-vascular system
- Respiratory system
- Urinary System
- Musculoskeletal System
- Reproductive system
- Endocrine system

Module-IV: Basic concept on elementary diseases and procedures in Human Systems

- **Gastrointestinal system** – cholecystitis, cholelithiasis, appendicitis, intestinal obstruction, hernia, peritonitis, laparotomy, laparoscopy, gastroscopy, colonoscopy

- **Respiratory system** – tuberculosis, bronchial asthma, pulmonary embolism, pneumonia, bronchoscopy, PFT and CPR
- **Circulatory system** – hypertension, coronary artery disease, cardiac arrest, ECG, Echo cardiogram, coronary angioplasty, CABG, Cardiac catheterisation, TMT, Pacemaker
- **Urinary system** – UTI, renal stones, renal failure, cystoscopy, haemodialysis, peritoneal dialysis
- **Reproductive system** –
- **Female** – menstrual disorders, fibroids, malignancies, mammography, IVF, Tubectomy, Hysterectomy, D&C
- **Male** – enlargement of prostate, hydrocele, TURP
- **Nervous system** – stroke, brain tumor, brain and spinal cord injuries, EEG, MRI, CT scan
- **Oncology** – histopathology and frozen sections, FNAC, nuclear medicine application

Course Outcome (CO)

CO#	CO
CO 01	Identify and define prefixes, roots, and suffixes in order to combine forms of terminology.
CO 02	Develop basic vocabulary of medical terms and abbreviations.
CO 03	Identify major body structure and functions that reinforces knowledge of basic anatomy and physiology.
CO 04	Correctly construct singular and plural forms of terms
CO 05	Construct medical terms, given a definition.
CO 06	Demonstrate an understanding of medical terminology by identifying terms in disease concepts and with medical procedures.
CO 07	Apply knowledge of medical terminology in order to comprehend medical jargons used by medical and allied fraternity in health care organizations, read medical prescriptions and clinical history of patients effortlessly

CO-PO-PSO Mapping

CO#	CO	POs	PSOs
CO 01	Identify and define prefixes, roots, and suffices in order to combine forms of terminology.	1,3,6	1,2,3,4
CO 02	Develop basic vocabulary of medical terms and abbreviations.	1,3,6	1,2,3,4,7
CO 03	Identify major body structure and functions that reinforces knowledge of basic anatomy and physiology.	1,3,6	1,2,3,4
CO 04	Correctly construct singular and plural forms of terms	1,3,6	1,2,3,4,8
CO 05	Construct medical terms, given a definition.	1,3,6	1,2,3,4
CO 06	Demonstrate an understanding of medical terminology by identifying terms in disease concepts and with medical procedures.	1,3,6	1,2,3,4,6
CO 07	Apply knowledge of medical terminology in order to comprehend medical jargons used by medical and allied fraternity in health care organizations, read medical prescriptions and clinical history of patients effortlessly	1,2,3 4,5	1,2,3,4,5

CO-PO Matrix

	PO 01	PO 02	PO 03	PO 04	PO 05	PO 06
CO 01	3	-	3	-	-	2
CO 02	3	-	3	-	-	2
CO 03	3	-	3	-	-	2
CO 04	3	-	3	-	-	2
CO 05	3	-	3	-	-	2
CO 06	3	-	3	-	-	2
CO 07	3	3	2	2	1	-
Average	3.00	3.00	2.85	2.00	1.00	2.00

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 01	3	3	2	2	-	-	-	-
CO 02	3	3	2	2	-	-	2	-
CO 03	3	3	2	2	-	-	-	-
CO 04	3	3	2	2	-	-	-	2
CO 05	3	3	2	2	-	-	-	-
CO 06	3	3	2	2	-	2	-	-
CO 07	3	3	2	2	2	-	-	-
Average	3.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Hospital & Health System

Semester: 2

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Subject Code:

Syllabus

Module-I

- Definition & meaning of health
- Definition & concept of various dimensions of well-being
- Spectrum of health
- Determinants of health

Module-II

- Definition & meaning of Hospital
- Historical development of Hospitals
- Role and Changing concept of hospitals
- Peculiarities of the hospital system
- Features and Functions of a modern hospital

Module-III

- Health committees and their recommendations
- Historical development of healthcare system in India
- Levels of health care in India with emphasis on Primary Health care (definition, organization, principles and functions of primary health care)
- Health care delivery model in India
- Health Manpower and suggested norms
- Health planning over the years in India

Module-IV

- International Health

Suggested Readings:

1. Hospital Administration, D.C Joshi, Mamta Joshi, Jaypee
2. Park's Textbook of Preventive and Social Medicine, K. Park, Banarasidas Bhanot
3. Hospital Administration, Francis & D'souza, Jaypee

Course Outcome (CO)

CO#	CO
CO 01	Describe the health systems of various Countries including India
CO 02	Discuss and learn public health care system in India
CO 03	Critically analyze the various components of health care delivery system in India
CO 04	Apply various principles of planning and management in implementing health projects and programmes.
CO 05	Recognize the various sections of healthcare legislations in India and initiate appropriate actions in public health practice
CO 06	Apply the concept of planning and management tools such as PERT, CPM, etc

CO-PO-PSO Mapping

CO#	CO	POs	PSOs
CO 01	Describe the health systems of various Countries including India	1,3,4	1,4,6,7
CO 02	Discuss and learn public health care system in India	1,3,4,5	1,2,4,6,7,8
CO 03	Critically analyze the various components of health care delivery system in India	1,3,4,5	1,2,4,6,7,8
CO 04	Apply various principles of planning and management in implementing health projects and programmes.	1,2,3,4,5,6	1,2,3,4,5
CO 05	Recognize the various sections of healthcare legislations in India and initiate appropriate actions in public health practice	1,2,3,4,5	1,2,3,4,5,6,7,8
CO 06	Apply the concept of planning and management tools such as PERT, CPM, etc	1,2,3,4	1,2,3,4,5,6,7

CO-PO Matrix

	PO 01	PO 02	PO 03	PO 04	PO 05	PO 06
CO 01	3	-	3	2	-	-
CO 02	3	-	3	2	3	-
CO 03	3	-	3	2	3	-
CO 04	3	3	3	2	3	3
CO 05	3	3	3	2	2	-
CO 06	3	3	3	2	-	-
Average	3	3	3	2	2.75	3

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

CO-PSO Matrix

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 01	3	-	-	3	-	2	2	-
CO 02	3	3	-	3	-	2	2	2
CO 03	3	3	-	3	-	2	2	2
CO 04	3	3	2	3	2	-	-	-
CO 05	3	3	2	3	2	2	2	2
CO 06	3	3	2	3	2	2	2	-
Average	3	3	2	3	2	2	2	2

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

Subject: Financial Management

Semester: 3

Subject Category: MC

Credit: 5 (L:4; T:1)

Syllabus

Module-I: Introduction: Definition, Nature and Scope of Financial Management, The Risk-Return trade-off. Introduction of the three important decisions in Financial Management: Capital Budgeting, Capital Structuring and Dividend.

Module-II: Investment Decision: The Capital Budgeting Process, Cash flow Estimation, Concept of Time Value of Money, Future Value, Net Present Value, Internal Rate of Return.

Module-III: Financing Decision: Debt and Equity, Leverage (High Leverage and Low Leverage firms), Cost of Capital: Cost of Equity (Capital Asset Pricing Model) and Cost of Debt, Calculation of Weighted Average Cost of Capital, Theories (Net Income, Net Operating Income, Modigliani Miller and Traditional Approach).

Module-IV: Working Capital: Concept of Working Capital, Working Capital Management, Characteristics of Current Assets, Factors Influencing Working Capital Requirements, Level of Current Assets, Current Assets Financing Policy, Operating Cycle and Cash Cycle.

Module-V: Fund Flow Statement: Statement of Changes in Working Capital, Fund Flow Analysis (Sources of Funds and Application of Funds), Funds from Operations (Non-fund items and Non-trading Charges).

Module-VI: Ratio Analysis: Concept of Ratio Analysis, Importance of Ratio Analysis, Calculation of different types of ratios: Liquidity, Valuation, Solvency, Profitability and Turnover. Interpretation of the results of the ratios.

Module-VII: Bond Valuation: Concept of Bonds, Different types of Bonds, Calculation of Bonds with annual and semi-annual interests, Price-Yield Relationship, Clean and Dirty Bonds, Different types of yields.

Module-VIII: Dividend Decision: Concept of Dividend, Why firms pay dividends?, Dividend Payout Ratio, Dividend Yield, Ex-dividend, Record Date, Dividend Payout Policy (Stable, Constant and Residual), Gordon Growth Model.

Suggested Readings:

1. P. Singh (2009), Fundamentals of Financial Management, Second Edition, Ane Books Private Limited.
2. Damodaran (2014), Applied Corporate Finance, Fourth Edition, John, Wiley & Sons, Inc.
3. P. Chandra (2011), Financial Management, Eight Edition, Tata McGraw Hill Publishing Company Limited.
4. Shapiro (2020), Multinational Financial Management, Eleventh Edition, John, Wiley & Sons, Inc.

Course Outcome:

CO #	Description
CO-1	Enumerates the concept of Financial Management along with the Risk-Return trade off and the three important decisions of Capital Budgeting, Capital Structure and Dividends. Thus, helps students in understanding the core concepts of Corporate Finance. It also helps students to understand as to how management principles can be applied in financial planning.
CO-2	Helps students to understand the concept of Capital Budgeting. Thus, empowering students with the necessary skill sets that are required to take effective business decisions (using creative techniques) for achieving the objectives of an organisation.
CO-3	States the important concept of Capital Structuring. Thus, imparting students with the knowledge for financing a company. It also imparts students with the knowledge of Cost of Capital. Thus, empowering students with the knowledge and technical knowhow to succeed in the corporate world. It also helps students to understand the importance of Ethics in running a business and to inculcate the spirit of social responsibility. Thus, in this way helping students to act as Corporate Citizens.
CO-4	Helps students to understand the concept of Working Capital. Thus, imparting students with the knowledge and the skill sets which will enable them to take leadership role for solving various business problems in an organisation. It also helps students to understand the importance of Ethics in running a business and to inculcate the spirit of social responsibility. Thus, in this way making students job ready.
CO-5	Enumerates the concept of Fund Flow Statement. In other words, it helps students to analyse as to how a company raises and utilises its funds. Thus, empowering students with the knowledge that is necessary to succeed in the corporate world.
CO-6	Depicts the important concept of Ratio Analysis. Thus, imparting students with the necessary skill sets to analyse the financial health as well as calculating the value of a company. Thus, in the process making them job ready.
CO-7	Helps students to understand the different aspects of Bond Valuation (Debt Instrument). Thus, imparting within students the knowledge to succeed in corporate world.
CO-8	Enumerates the concept as well as the different aspects of Dividends as well as valuation of a company using Gordon Growth Model. Thus, empowering students with the necessary skill sets to meet the challenges of the business world (using creative techniques). Thus, in this way making them job ready.

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Helps in understanding the core concepts of Corporate Finance.	1,2,3,4,5	1,2,3,4,5
CO-2	Provides the necessary skill sets that are required to take effective business decisions for achieving the objectives of an organisation.	1,2,3,4,6	1,2,3,4,5,6,7,8
CO-3	Helps to understand the importance of Ethics in running a business and to inculcate the spirit of social responsibility.	1,2,3,4,5	1,2,3,4,5
CO-4	Imparts the knowledge and the skill sets for taking leadership roles for solving various business problems in an organisation.	1,2,3,4,6	1,2,3,4,6,8
CO-5	Imparting the knowledge that is necessary to succeed in the corporate world.	1,2,3,4,5	1,2,3,4,5
CO-6	Providing the necessary skill sets to analyse the financial health as well as calculating the value of a company.	1,2,3,4	1,2,3,4,6,7
CO-7	Providing skills that can be used in solving business problems through real-word case studies.	1,2,3,4	1,2,3,4,6,7
CO-8	Empowering students with the necessary skill sets to meet the challenges of the business world. Thus, in this way making them job ready.	1,2,3,4	1,2,3,4,6,7,8

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	3	1	3	-	3	-
CO 2	1	2	2	2	2	2
CO 3	3	1	3	3	3	1
CO 4	-	2	1	2	-	2
CO 5	-	1	3	3	1	3
CO 6	2	2	2	2	2	2
CO 7	-	1	-	-	2	2
CO 8	3	1	2	1	1	1
Average	2.33	1.20	2.33	2.20	2.00	1.86

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	3	1	3	1	3	-	-	3
CO 2	2	2	2	2	1	2	2	2
CO 3	1	3	1	1	2	3	1	1
CO 4	1	2	2	2	2	2	2	2
CO 5	1	3	3	1	3	-	-	-
CO 6	2	2	3	2	2	2	2	2
CO 7	2	1	2	1	1	2	2	2
CO 8	1	2	3	1	1	1	1	1
Average	1.63	2.00	2.38	1.38	1.88	2.00	1.67	1.86

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Hospital Operations Management

Semester: 3

Subject Category: MC

Credit: 4 (L:3, T:1)

Syllabus

Module-I

❖ Introduction to Hospital Operations Management

- Overview of Healthcare Operations: Importance, challenges, and key functions of hospital operations.
- Evolution of Hospital Operations: Historical development and modern trends in healthcare operations management.
- Role of Operations in Healthcare: Understanding how efficient operations impact patient care, safety, and financial sustainability.

Module-II

❖ Quality and Patient Safety in Hospital Operations

- Total Quality Management (TQM): Principles of TQM and their application in healthcare settings.
- Patient Safety and Risk Management: Identifying and mitigating risks to ensure patient safety and minimize medical errors.

Module-III

❖ Waste Management in Hospitals

- Safe disposal of medical waste and hazardous materials
- Environmental sustainability in waste management

Module-IV

❖ Advanced Topics in Hospital Operations Management

- Healthcare Information Systems: Integration of technology, electronic health records (EHR), and data analytics in hospital operations.
- Emergency Preparedness and Disaster Management: Planning for emergencies, crisis response, and maintaining operational continuity.

Suggested Readings

1. Healthcare Operati Healthcare Facility Planning: Thinking Strategically" by Cynthia
2. Haywardons Management" by Daniel B. McLaughlin and John R. Olson
3. "Essentials of Hospital Administration and Management" by K. Rama Mohan Rao and M. Sivakumar

Course Outcome (CO)

CO #	Description
CO -1	Upon completing this course, students will be able to comprehend the significance of hospital operations, recognizing their impact on patient care, safety, and the financial sustainability of healthcare organizations.
CO-2	Students will demonstrate an understanding of Total Quality Management (TQM) principles and apply them to healthcare operations, leading to improved processes, patient safety, and organizational efficiency.
CO-3	Upon completion, students will be capable of designing and implementing effective waste management practices in hospitals, ensuring safe disposal of medical waste, minimizing environmental impact, and complying with regulations.
CO-4	Students will be able to evaluate the integration of healthcare information systems, electronic health records (EHR), and data analytics in hospital operations, fostering better decision-making, patient management, and communication.
CO-5	Upon completing this course, students will be prepared to contribute to emergency preparedness and disaster management efforts in healthcare settings, ensuring operational continuity, crisis response, and effective resource allocation.
CO-6	Students will develop the skills to plan and respond to emergencies and disasters in healthcare settings, ensuring operational continuity, resource allocation, and patient safety during crisis situations.
CO-7	Upon completion, students will be prepared to critically evaluate the principles of environmental sustainability and their application in waste management within healthcare operations, considering the long-term impact on patient care and the environment.

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Upon completing this course, students will be able to comprehend the significance of hospital operations, recognizing their impact on patient care, safety, and the financial sustainability of healthcare organizations.	1, 2, 5	1, 4, 5, 8
CO-2	Students will demonstrate an understanding of Total Quality Management (TQM) principles and apply them to healthcare operations, leading to improved processes, patient safety, and organizational efficiency.	1, 2, 3, 5, 6	1, 3, 4, 6, 8
CO-3	Upon completion, students will be capable of designing and implementing effective waste management practices in hospitals,	1, 2, 3, 5	1, 3, 4, 5, 6

	ensuring safe disposal of medical waste, minimizing environmental impact, and complying with regulations.		
CO-4	Students will be able to evaluate the integration of healthcare information systems, electronic health records (EHR), and data analytics in hospital operations, fostering better decision-making, patient management, and communication	1, 2, 3, 4	1, 4, 6, 7, 8
CO-5	Upon completing this course, students will be prepared to contribute to emergency preparedness and disaster management efforts in healthcare settings, ensuring operational continuity, crisis response, and effective resource allocation.	1, 2, 3, 5, 6	1, 4, 6, 7
CO-6	Students will develop the skills to plan and respond to emergencies and disasters in healthcare settings, ensuring operational continuity, resource allocation, and patient safety during crisis situations	1, 2, 3, 4	1, 2, 3, 5, 6, 8
CO-7	Upon completion, students will be prepared to critically evaluate the principles of environmental sustainability and their application in waste management within healthcare operations, considering the long-term impact on patient care and the environment.	1,2,4,6	1, 2, 4, 6, 7, 8

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	3	3			2	
CO 2	3	3	2		3	2
CO 3	3	3	2		2	
CO 4	3	3	2	2		
CO 5	3	3	2		2	2
CO 6	3	3	2	1		
CO 7	3	3		1		1
Average	3	3	2	1.33	2.25	1.67

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	3			2	2			1
CO 2	3		3	2		2		1
CO 3	3		3	2	2	2		
CO 4	3			2		2	1	1
CO 5	3			3		2	2	
CO 6	3	2	3		2	2		1
CO 7	3	2		2		2	2	1
Average	3	2	3	2.16	2	2	1.67	1

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Hospital Front Office & Emergency Management

Semester: 3

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Subject Code:

Syllabus

Module-I: Introduction to Hospital Front Office Management

- **Overview of Hospital Management:** Introduction to the healthcare industry, its structure, and the role of front office in hospital operations.
- **Functions of Hospital Front Office:** Understanding the key responsibilities of the front office, including patient registration, appointment scheduling, billing, and patient communication.

Module-II: Hospital Appointment Scheduling and Patient Registration

- **Appointment Scheduling Systems:** Different appointment scheduling methods, software tools, and strategies for optimizing patient flow.
- **Patient Registration Process:** Step-by-step guide to patient registration, including demographic data collection, insurance verification, and legal documentation.

Module-III: Emergency Management in Hospital Settings

- **Hospital Emergency Preparedness:** Introduction to emergency management, disaster planning, and the front office's role in coordinating responses.
- **Triage and Patient Flow:** Understanding the triage process, patient prioritization during emergencies, and managing patient flow in high-pressure situations

Module-IV: Laws Related to Occupational health in India

- **Communication During Emergencies:** Establishing effective communication channels with medical staff, patients, and external agencies during emergencies.
- **Crisis Leadership:** Developing leadership skills for front office staff to remain composed, make quick decisions, and provide support during critical incidents.

Course Outcome (CO)

CO#	CO
CO 01	Apply principles of leadership, interpersonal skills, and entrepreneurship to manage and lead front office operations effectively in a healthcare setting
CO 02	Utilize acquired knowledge in management, accounting, operations, marketing, and human relations to efficiently handle appointment scheduling, patient registration, and billing.
CO 03	Demonstrate problem-solving abilities by efficiently managing patient flow during emergencies and crisis situations.
CO 04	Apply ethical and legal standards in patient registration and documentation processes, adhering to industry regulations and contributing to the continuous development of healthcare ethics.
CO 05	Exhibit effective communication skills during emergencies, ensuring clear and concise information exchange with medical staff, patients, and external agencies
CO 06	Employ critical thinking and decision-making skills to prioritize patient care and manage resources effectively during emergency situations.
CO 07	Develop empathy and resilience while handling patient inquiries, complaints, and concerns, reflecting the empathetic care provision

CO-PO-PSO Mapping

CO#	CO	POs	PSOs
CO 01	Apply principles of leadership, interpersonal skills, and entrepreneurship to manage and lead front office operations effectively in a healthcare setting	1,3,6	1,2,3,4
CO 02	Utilize acquired knowledge in management, accounting, operations, marketing, and human relations to efficiently handle appointment scheduling, patient registration, and billing.	1,3,6	1,2,3,4,7
CO 03	Demonstrate problem-solving abilities by efficiently managing patient flow during emergencies and crisis situations.	1,3,6	1,2,3,4
CO 04	Apply ethical and legal standards in patient registration and documentation processes, adhering to industry regulations and contributing to the continuous development of healthcare ethics.	1,3,6	1,2,3,4,8
CO 05	Exhibit effective communication skills during emergencies, ensuring clear and concise information exchange with medical staff, patients, and external agencies	1,3,6	1,2,3,4
CO 06	Employ critical thinking and decision-making skills to prioritize patient care and manage resources effectively during emergency situations.	1,3,6	1,2,3,4,6
CO 07	Develop empathy and resilience while handling patient inquiries, complaints, and concerns, reflecting the empathetic care provision	1,2,3,4,5	1,2,3,4,5

CO-PO Matrix

	PO 01	PO 02	PO 03	PO 04	PO 05	PO 06
CO 01	3	-	3	-	-	2
CO 02	3	-	3	-	-	2
CO 03	3	-	3	-	-	2
CO 04	3	-	3	-	-	2
CO 05	3	-	3	-	-	2
CO 06	3	-	3	-	-	2
CO 07	3	3	2	2	1	-
Average	3	3	2.85	2	1	2

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 01	3	3	2	2	-	-	-	-
CO 02	3	3	2	2	-	-	2	-
CO 03	3	3	2	2	-	-	-	-
CO 04	3	3	2	2	-	-	-	2
CO 05	3	3	2	2	-	-	-	-
CO 06	3	3	2	2	-	2	-	-
CO 07	3	3	2	2	2	-	-	-
Average	3	3	2	2	2	2	2	2

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Cost & Management Accounting

Semester: 3

Subject Category: NM

Credit: 4 (L: 3, T: 1)

Syllabus

Module I

Introduction: Cost and Cost Accounting, Scope, Objectives, Advantages and disadvantages, cost sheet, Techniques of Costing - Single Output Costing, Job Costing, Contract & Batch Costing,

Module II

Standard Costing and Variance Analysis: material variances, labour, variances, Cost volume profit Analysis For A Multi-Product Firm, Marginal Costing: contribution, P/V ration; Break even analysis, margin of safety, application of marginal costing techniques.

Module III

Introduction To Management Accounting: Objectives, Importance & limitations of Management Accounting, Management accountant function. Similarities and Difference Between cost and Management accounting, Ratio Analysis, Cash Flow Statement (as per AS14). Fund Flow statement analysis

Module IV

Pricing And Decision-Making: Budgetary Control, Meaning, Classification, types of budget, Zero base budgeting, Master budget, cash budget.

Suggested Reading:

1. Cost Accounting – Theory and Problems Maheshwari, S. N. and Mittal, S. N. (2009), 22nd Revised Edition, Shri Mahavir Book Depot.
2. Cost Accounting, Rajasekaran, (2010), 1st edition, Pearson Education.
3. Cost Accounting - Principle Practices Dutta, Mahesh, (2006), 1st edition, Pearson Education.
4. Cost Accounting, Arora, M.N., (2009), Vikas Publishing House.

Course Outcome (CO)

CO #	Description
CO -1	Develop the knowledge base of basic theory, concepts and practice of management and cost accounting.
CO-2	Understand information contained in the published financial statements of companies and other organizations.
CO-3	Learn how to prepare accounting statements, their uses and limitations
CO-4	Enable taking the managerial decisions by using various tools of financial statement analysis.

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Develop the knowledge base of basic theory, concepts and practice of management and cost accounting.	1,2,3,4,5,6	1,2,3,4,5,6,7,8
CO-2	Understand information contained in the published financial statements of companies and other organizations.	1,2,3,4,5,6	1,2,3,4,5,6,7,8
CO-3	Learn how to prepare accounting statements, their uses and limitations	1,2,4,5,6	1,2,3,4,5,6,7,8
CO-4	Enable taking the managerial decisions by using various tools of financial statement analysis.	1,2,3,4,5,6	1,2,3,4,5,6,7,8

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	2	1	2	3	2	2
CO 2	3	2	3	2	3	1
CO 3	1	3	-	3	1	1
CO 4	3	3	2	2	3	3
Average	2.25	2.25	2.33	2.50	2.25	1.75

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	3	3	3	2	1	2	3	3
CO 2	1	1	3	2	3	3	1	3
CO 3	3	2	2	2	1	2	2	2
CO 4	3	3	3	3	3	2	3	3
Average	2.50	2.25	2.75	2.25	2.00	2.25	2.25	2.75

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Human Resource Management

Semester: 4

Subject Category: MC

Credit: 5 (L:4, T:1)

Syllabus

Module I: Fundamentals of HR Management

Corporate objectives and challenges of HR in a dynamic environment; Structure and functions of HR Department, Role of HR Manager, HRD

Module II: Human Resource Planning

Demand and Supply, Downsizing and Retention; Supply and Demand Forecasting Methods, Manpower Inventory, Career Planning, Succession Planning, Personnel Policy, Human Resource Information System (HRIS), Job Analysis, Case study

Module III: Recruitment and Selection

Concept of Recruitment, Factors Affecting Recruitment, Types of Recruitment; Selection: Concept of Selection, Process of Selection, Selection Tests, and Barriers in Selection, Case study

Module IV: Performance Appraisal

Introduction, Concept of Performance Appraisal, Purpose, Process, Methods, and Major Issues in Performance Appraisal

Module V: Training and Development

Training Process and Methods, HRD, Case study

Module VI: Compensation and Reward Management

Wages, Components, System of Wage Payment, Fringe Benefits, and Retirement Benefits, Case Study

Module VII: Industrial Relations in India

Parties; Management and Trade Unions, Industrial Disputes: Trends, Collective Bargaining, Settlement Mechanisms, Role of Government, Labour Policy in India Grievance Redressal, Dispute Resolution and Conflict Management. Case Study

Module VIII: Strategic HRM

Meaning, Strategic HRM vs Traditional HRM, SHRM Process, Nature of e-HRM, e-Recruitment & Selection, e-Performance Management, e-Learning.

Suggested Reading:

Textbooks:

1. Aswathappa, K. - Human Resource Management, Tata McGraw Hill
2. Pattanayek, B. - Human Resource Management, PHI Ramaswamy, E.A. - Managing Human Resources, OUP Saiyadain, M.S - Human Resource Management: Tata McGraw Hill
3. Sangvi Seema - Human Resource Management: Excel Books
4. Armstrong, M. (2006). Armstrong's Handbook of human resource management practices (10th ed.). London: Kogan page.

Reference Books:

1. Cascio, W. (2009). Managing human resources (8th ed.). New Delhi: McGraw Hill
2. DeCenzo, D. A., & Robbins, S. P. (2010). Fundamentals of human resource management (9th ed.) New York: John Wiley & Sons
3. Dessler, G. (2008). Human resource management (11th ed.). New Delhi: Pearson Prentice Hall
4. Greer, C. R. (2005). Strategic human resource management: A general managerial approach (2nd ed.). New Delhi: Pearson Education

Course Outcome (CO)

CO #	Description
CO -1	Fundamentals of HR Management helps the students to analyse the role of HRM in effective business administration and how HRM should be used as a tool to execute strategies.
CO-2	Human Resource Planning explains the students regarding the company's their vision, values, and strategies; how these elements relate to the various parts of HRM, such as HR policy, organizational structure, HR systems (recruitment, placement, evaluation, compensation, and development) and organizational culture in organizations.
CO-3	Recruitment and Selection helps the students to maximize employee strength to meet the employer's strategic goals which includes the process of sourcing, screening, shortlisting, and selecting the right candidates for the filling the required vacant positions.
CO-4	Performance Appraisal concepts helps the students to understand the processes, methods, and major issues in this regard.
CO-5	Training and Development concepts help the students to understand the need and its various methods which are essential to comprehend employees' need.
CO-6	Compensation and Reward Management helps the students to design compensation system, to gain adequate knowledge on economic and behavioural dimensions of Compensation Management and to administer the compensation package for special groups.

CO-7	Industrial Relations helps the learners to realize the importance of the parties, their management and trade unions, industrial disputes including trends, collective bargaining, settlement machineries, role of Government, Labour Policy in India, grievance redressal, dispute resolution and conflict management.
CO-8	Strategic HRM assists the students to understand the meaning, the processes, nature of e-HRM, e-Recruitment & Selection, e-Performance Management and e-Learning.

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Fundamentals of HR Management helps the students to analyse the role of HRM in effective business administration and how HRM should be used as a tool to execute strategies.	1,2,3,4,5,6	1,2,3,4,5,7,8
CO-2	Human Resource Planning explains the students regarding the company's their vision, values, and strategies; how these elements relate to the various parts of HRM, such as HR policy, organizational structure, HR systems (recruitment, placement, evaluation, compensation, and development) and organizational culture in organizations.	1,3,5,6	1,3,4,5,6,8
CO-3	Recruitment and Selection helps the students to maximize employee strength to meet the employer's strategic goals which includes the process of sourcing, screening, shortlisting, and selecting the right candidates for the filling the required vacant positions.	1,2,3,5,6	1,2,3,5,6,7,8
CO-4	Performance Appraisal concepts helps the students to understand the processes, methods, and major issues in this regard.	1,2,4,5,6	1,2,4,5
CO-5	Training and Development concepts help the students to understand the need and its various methods which are essential to comprehend employees' need.	1,2,4,5,6	1,2,3,4,5,8
CO-6	Compensation and Reward Management helps the students to design compensation system, to gain adequate knowledge on economic and behavioural dimensions of Compensation Management and to administer the compensation package for special groups.	1,2,3,5,6	1,2,3,5,6,7,8
CO-7	Industrial Relations helps the learners to realize the importance of the parties, their management and trade unions, industrial disputes including trends, collective bargaining, settlement machineries, role of Government, Labour Policy in India, grievance redressal, dispute resolution and conflict management.	1,2,3,5	3,4,5,6,7,8
CO-8	Strategic HRM assists the students to understand the meaning, the processes, nature of e-HRM, e-Recruitment & Selection, e-Performance Management and e-Learning.	1,2,3,5,6	1,2,3,5,7,8

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	3	2	3	3	3	3
CO 2	3	-	3	-	3	3
CO 3	3	3	3	-	3	3
CO 4	2	3	-	3	2	2
CO 5	3	2	-	2	3	3
CO 6	3	3	3	-	3	3
CO 7	3	3	2	-	3	-
CO 8	3	3	3	-	3	3
Average	2.88	2.71	2.83	2.67	2.88	2.86

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	3	3	3	3	3	-	3	2
CO 2	2	-	3	3	3	1	-	3
CO 3	3	3	2	-	2	3	2	2
CO 4	2	2	-	3	3	-	-	-
CO 5	2	3	2	2	2	-	-	2
CO 6	3	3	2	-	3	1	1	3
CO 7	-	-	2	2	2	1	3	2
CO 8	3	3	3	-	3	-	2	2
Average	2.57	2.83	2.43	2.60	2.63	1.50	2.20	2.29

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Hospital Clinical Services

Semester: 4

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Subject Code:

Syllabus

Module-I

- Concept of Clinical Services, Types of clinical services
- Functions, location, work flow, physical facilities, design & space requirement, staffing, equipment, managerial issues
 - OPD Services
 - Accident & Emergency Services

Module-II

- Functions, location, work flow, physical facilities, design & space requirement, staffing, equipment, managerial issues
 - In Patient Services
 - Operation Theatre Services
 - Nursing Services

Module-III

- Functions, location, work flow, physical facilities, design & space requirement, staffing, equipment, managerial issues
 - Intensive care Unit
 - Coronary care Unit
 - Dialysis Unit
 - Organ Transplant Unit

Module-IV

- Functions, location, work flow, physical facilities, design & space requirement, staffing, equipment, managerial issues

- Burn/ Isolation Unit
- Physical Medicine & Rehabilitation Services

Suggested Readings:

1. Hospital Administration, D.C Joshi, Mamta Joshi, Jaypee
2. Principles of Hospital Administration and Planning by B.M Sakharkar, Jaypee Brothers

Course Outcome (CO)

CO#	CO
CO 01	Identify various clinical services of the hospital
CO 02	Describe the role of clinical services in delivering quality patient care and overcome the challenges that create blocks in the delivery of quality care.
CO 03	Identify the planning and designing considerations for various clinical departments of the hospital.
CO 04	Recognize the functional requirements of various clinical service departments like physical facilities, design and space requirements, equipment, manpower planning etc.
CO 05	Develop skills in setting up the clinical service departments in a new hospital or expansion of the same in an existing hospital in accordance with the law of the land.

CO-PO-PSO Mapping

CO#	CO	POs	PSOs
CO 01	Identify various clinical services of the hospital	1,3,4,5	1,2,6,7,8
CO 02	Describe the role of clinical services in delivering quality patient care and overcome the challenges that create blocks in the delivery of quality care.	1,2,3,5	1,2,3,5,6
CO 03	Identify the planning and designing considerations for various clinical departments of the hospital.	1,3,4,5,6	1,5,6,7,8
CO 04	Recognize the functional requirements of various clinical service departments like physical facilities, design and space requirements, equipment, manpower planning etc.	1,2,3,5	1,3,4,5
CO 05	Develop skills in setting up the clinical service departments in a new hospital or expansion of the same in an existing hospital in accordance with the law of the land.	1,2,3,4,5	1,3,4,5,7

CO-PO Matrix

	PO 01	PO 02	PO 03	PO 04	PO 05	PO 06
CO 01	3	-	3	3	2	-
CO 02	3	3	2	-	2	-
CO 03	3	-	2	3	3	2
CO 04	3	2	2	-	3	-
CO 05	3	2	3	2	3	
Average	3	2.3	2.4	2.67	2.6	2

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

CO-PSO Matrix

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 01	3	2	-	-	-	2	2	1
CO 02	3	2	2	-	2	2	-	-
CO 03	3	-	-	-	2	2	2	1
CO 04	3	-	2	2	2	-	-	-
CO 05	3	-	3	2	2	-	2	-
Average	3	2	2.33	2	2	2	2	1

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

Subject: Medical Record Management

Semester: 4

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Subject Code:

Syllabus

Module-I

- Role of Medical Records (MR) in health care delivery- Definition, Types of MR, Importance of MR
- Flow chart of function, Assembling & deficiency check
- Format types of MR, Characteristics of MR, ownership of MR
- Maintenance of records in the ward, Content of MR

Module-II

- Coding
- Indexing
- Filing
- Computerization of MR
- Microfilming,
- Hospital statistics

Module-III

- Organization & management of MR
- Retention of MR, Preservation of MR
- Role of MRD Personnel
- Legal aspects of MR

Module-IV

- Medical Audit: Types, Procedures & its importance.

Suggested Readings:

1. Medical Records Organization and Management, GD Mogli—Jaypee
2. Hospital Administration, Tabish - O.U.P.
3. Principles of Hospital Administration & Planning, B.M.Sakharkar -Jaypee
4. Hospital Administration & Management, C.M. Francis & D' Souza- Jaypee

Course Outcome (CO)

CO#	CO
CO 01	The students will be able to define and identify Medical Records, its types and contents and able to arrange them logically in a medical record file of the patient.
CO 02	The students will identify deficient or incomplete medical records and devise steps to overcome the deficiencies and ensure accuracy of data in the records.
CO 03	The students will analyse records and derive useful statistics from them which will enable them to take important decisions in healthcare settings.
CO 04	The students will be able to learn concepts of coding, indexing and filing and help in the proper storing and maintenance of medical records for easy retrieval.
CO 05	The students will be able to organize a MRD in a hospital.
CO 06	The students will be able to know the legal formalities involved in medical record keeping and ensure compliance of record with law.
CO 07	The students will help in medical audit to determine the appropriateness of care given to the patients

CO-PO-PSO Mapping

CO#	CO	POs	PSOs
CO 01	The students will be able to define and identify Medical Records, its types and contents and able to arrange them logically in a medical record file of the patient.	1,2,5	1,4,5,8
CO 02	The students will identify deficient or incomplete medical records and devise steps to overcome the deficiencies and ensure accuracy of data in the records.	1,2,3,5,6	1,3,4,6,8
CO 03	The students will analyse records and derive useful statistics from them which will enable them to take important decisions in healthcare settings.	1,2,3,5	1,3,4,5,6
CO 04	The students will be able to learn concepts of coding, indexing and filing and help in the proper storing and maintenance of medical records for easy retrieval.	1,2,3,4	1,4,6,7,8
CO 05	The students will be able to organize a MRD in a hospital.	1,2,3,5,6	1,4,6,7
CO 06	The students will be able to know the legal formalities involved in medical record keeping and ensure compliance of record with law.	1,2,3,4	1,2,3,5,6,8
CO 07	The students will help in medical audit to determine the appropriateness of care given to the patients	1,2,4,6	1,2,4,6,7,8

CO-PO Matrix

	PO 01	PO 02	PO 03	PO 04	PO 05	PO 06
CO 01	3	3	-	-	2	-
CO 02	3	3	2	-	3	2
CO 03	3	3	2	-	2	-
CO 04	3	3	2	2	-	-
CO 05	3	3	2		2	2
CO 06	3	3	2	1		
CO 07	3	3		1		1
Average	3	3	2	1.33	2.25	1.67

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

CO-PSO Matrix

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 01	3	-	-	2	2	-	-	1
CO 02	3	-	3	2	-	2	-	1
CO 03	3	-	3	2	2	2	-	-
CO 04	3	-	-	2	-	2	1	1
CO 05	3	-	-	3	-	2	2	-
CO 06	3	2	3	-	2	2	-	1
CO 07	3	2	-	2	-	2	2	1
Average	3	2	3	2.16	2	2	1.67	1

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

Subject: Income Tax Laws & Practices

Semester: 4

Subject Category: NM

Credit: 4 (L: 3, T: 1)

Syllabus

Module-I

- a) Basic Concepts and Definitions under Income Tax Act, 1961.
Assessee, Previous year, Assessment year, Person, Income, Sources of income, Heads of income, Gross total income, Total income, Maximum marginal rate of tax, Tax Evasion, Tax avoidance-Penalty, Tax planning.
- b) Residential Status and Incidence of Tax Residential status of persons.
- c) Incomes which do not form part of Total Income.
- d) Agricultural Income
Definition, determination of agricultural and non-agricultural Income, assessment of tax liability when there are both agricultural and non-agricultural.
- e) Heads of Income and Provisions Governing Heads of Income: Salaries

Module-II

- a) Heads of Income and Provisions Governing Heads of Income
Income from House property.
Profits and Gains of Business and Profession.
Capital Gains.
Income from Other Sources.

Module-III

- a) Income of other Persons included in Assessee's Total Income Remuneration of spouse, income from assets transferred to spouse and Son's wife, income of minor.
- b) Set off and Carry Forward of Losses.
- c) Deductions from Gross Total Income.
- d) Rebate u/s 87A.

Module-IV

- a) Computation of Total Income and Tax Payable of Individual.
- b) Types of Returns and Advance Payment of Tax.
- c) Interest & Fees.

- d) Deduction and Collection of Tax at Source (TDS & TCS).
- e) E-filing of Income Tax Returns.

Suggested Readings

- Singhnia V.K., and Singhania K, Direct Tax Law and Practice, Taxmann
- Lal and Vashist, Direct Taxes, Pearson
- Ahuja and Gupta, Direct Taxes Law and Practice, Bharat
- Roy, S. K., Principles and Practice of Direct & Indirect Taxes, ABS
- Sengupta, C.H., Direct & Indirect Taxes, Dey Book Concern
- ICAI Study Material.

Course Outcome (CO)

CO #	Description
CO -1	Understand the basic concept of Income Tax
CO-2	Describe about the necessary provisions of Income Tax Act 1961.
CO-3	Assess working knowledge regarding computation of taxable income and tax liability pertaining to individuals.

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Understand the basic concept of Income Tax	1,2,3,4,5,6	1,2,3,4,5,6,7,8
CO-2	Describe about the necessary provisions of Income Tax Act 1961.	1,2,3,4,5,6	1,2,3,4,5,6,7,8
CO-3	Assess working knowledge regarding computation of taxable income and tax liability pertaining to individuals.	1,2,4,5,6	1,2,3,4,5,6,7,8

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	2	3	2	3	1	2
CO 2	2	2	2	2	3	1
CO 3	3	3		1	1	1
Average	2.33	2.67	2.00	2.00	1.67	1.33

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	3	3	3	2	1	3	3	2
CO 2	2	2	2	2	3	2	2	2
CO 3	3	2	2	2	1	2	2	2
Average	2.67	2.33	2.33	2.00	1.67	2.33	2.33	2.00

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Concept of Public Health

Semester: 5

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Subject Code:

Syllabus

Module-I: Public Health Concept

- Definition, Meaning of Public Health,
- Approaches of Public Health, Community Diagnosis and Need Assessment, Community Participation
- Epidemiological basis for health care management
- Right to health, Responsibilities of Health
- Health Equity

Module-II: Planning in Healthcare

- Health Planning
- National Health Policy, 2002 (overview)
- National Health Policy, 2017
- National Population Policy

Module-III: Public Health Programmes

- Concepts underlying the design of health programs
- National Health Programmes (National Dengue control programme, National Leprosy Eradication Control Programme, National Framework for Malaria Elimination (2016-2030) programme, NACP- IV(2012-2017), RNTCP, Universal Immunisation Programme including Indradhanush ,RCH Phase II, Vision 2020,National Health Mission, National Mental Health Programme, National Family Planning

Module-IV: Laws, Ethics & Challenges in Public Health

- Public health regulations in Indian context
- Public health information and privacy
- Research ethics in public health
- Regulations during emergencies and outbreaks
- Addressing newer challenges: Bioterrorism, conflicts and emerging infectious diseases

Suggested Readings:

1. Community Medicine, AH Suryakantha—JAYPEE
2. Preventive and Social Medicine, K.Park—Bhanot
3. Healthcare Management and administration , S.L Goel— Deep and Deep publication private Limited

Course Outcome (CO)

CO#	CO
CO 01	Apply contemporary ideas to influence program organization and management, problem solving and critical thinking in public health domain
CO 02	Work in socially, culturally and economically diverse populations by being attentive to needs of vulnerable and disadvantaged groups and be well versed with existing health systems.
CO 03	Demonstrate adequate knowledge and skills to a wide range of public health topics.
CO 04	Develop Analytical and assessment skills for collecting and interpreting information to address public health challenges.
CO 05	Develop communication skills for advocacy, dissemination and evaluation of public health data and information.

CO-PO-PSO Mapping

CO#	CO	POs	PSOs
CO 01	Apply contemporary ideas to influence program organization and management, problem solving and critical thinking in public health domain	1,2,3,5,6	1,2,3,4,5,7,8
CO 02	Work in socially, culturally and economically diverse populations by being attentive to needs of vulnerable and disadvantaged groups and be well versed with existing health systems.	1,2,3,4,5,6	1,2,3,4 5,7,8
CO 03	Demonstrate adequate knowledge and skills to a wide range of public health topics.	1,2,3,4,5	1,2,3,4,5,6,8
CO 04	Develop Analytical and assessment skills for collecting and interpreting information to address public health challenges.	1,2,3,4,5	1,2,3,4,5,6,8
CO 05	Develop communication skills for advocacy, dissemination and evaluation of public health data and information.	1,2,3,4,5,6	1,2,3,4,5,6,7,8

CO-PO Matrix

	PO 01	PO 02	PO 03	PO 04	PO 05	PO 06
CO 01	3	3	3	-	3	3
CO 02	3	3	3	2	3	3
CO 03	3	2	3	2	2	-
CO 04	3	2	3	2	2	-
CO 05	3	3	3	2	2	3
Average	3	2.6	3	2	2.8	3

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

CO-PSO Matrix

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 01	3	2	2	2	3	-	2	1
CO 02	3	2	2	2	3	-	2	1
CO 03	3	2	2	2	3	2	-	1
CO 04	3	2	2	2	3	2	-	1
CO 05	3	2	2	2	3	2	2	1
Average	3	2	2	2	3	2	2	1

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

Subject: Support & Utility Services in Hospital

Semester: 5

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Subject Code:

Syllabus

Module-I

- Blood Bank
- Pathology lab / Diagnostic Units (Radiology, Scan Centre)
- Control of Hospital Infection

Module-II

- Diet Services
- Linen Laundry Services
- Housekeeping Services

Module-III

- Mortuary services
- Pharmacy services
- Hospital Information System

Module-IV

- Transport Services (ambulance)
- Security Services
- Maintenance Services

Suggested Readings:

1. Hospital Administration — Tabish (O.U.P.)
2. Principles of Hospital Administration & Planning — B. M. Sakharkar, Jaypee Brothers
3. Hospital Administration & Management — C.M. Francis & D'Souza.

Course Outcome (CO)

CO#	CO
CO 01	Identify various support and utility services of the hospital
CO 02	Describe the role of support and utility services in delivering quality patient care and overcome the challenges that create blocks in the delivery of quality care.
CO 03	Identify the planning and designing considerations for various support departments of the hospital.
CO 04	Recognise the functional requirements of various support service departments like physical facilities, equipment, manpower planning etc.
CO 05	Develop skills in setting up the support service departments in a new hospital or expansion of the same in an existing hospital in accordance with the law of the land.

CO-PO-PSO Mapping

CO#	CO	POs	PSOs
CO 01	Identify various support and utility services of the hospital	1,3,4,5	1,2,6, 7,8
CO 02	Describe the role of support and utility services in delivering quality patient care and overcome the challenges that create blocks in the delivery of quality care.	1,2,3,5	1,2,3,5,6
CO 03	Identify the planning and designing considerations for various support departments of the hospital.	1,3,4,5,6	1,5,6,7,8
CO 04	Recognise the functional requirements of various support service departments like physical facilities, equipment, manpower planning etc.	1,2,3,5	1,3,4,5
CO 05	Develop skills in setting up the support service departments in a new hospital or expansion of the same in an existing hospital in accordance with the law of the land.	1,2,3,4,5	1,3,4,5,7

CO-PO Matrix

	PO 01	PO 02	PO 03	PO 04	PO 05	PO 06
CO 01	3	-	3	3	2	-
CO 02	3	3	2	-	2	-
CO 03	3	-	2	3	3	2
CO 04	3	2	2	-	3	-
CO 05	3	2	3	2	3	
Average	3	2.3	2.4	2.67	2.6	2

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

CO-PSO Matrix

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 01	3	2	-	-	-	2	2	1
CO 02	3	2	2	-	2	2	-	-
CO 03	3	-	-	-	2	2	2	1
CO 04	3	-	2	2	2	-	-	-
CO 05	3	-	3	2	2	-	2	-
Average	3	2	2.33	2	2	2	2	1

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

Subject: Customer Relationship Management in Hospitals

Semester: 5

Subject Category: MC

Credit: 4 (L:3, T:1)

Syllabus

Module-I

❖ Introduction to Customer Relationship Management (CRM) in Hospitals

- Overview of CRM: Understanding the concept, significance, and benefits of CRM in the healthcare context.
- Principles of Patient-Centric Care: Exploring patient expectations, preferences, and the importance of patient satisfaction

Module-II

❖ Strategies and Tools for Effective CRM in Hospitals

- Building Patient Relationships: Techniques for fostering trust, empathy, and effective communication with patients.
- Multichannel Communication: Utilizing various communication channels (phone, email, social media) to engage with patients

Module-III

❖ Managing Patient Feedback and Complaints

- Feedback Collection and Analysis: Methods for collecting patient feedback, surveys, and analyzing feedback data.
- Complaint Resolution: Strategies to effectively address patient complaints, resolve issues, and prevent recurrence

Module-IV

❖ Measuring and Enhancing CRM Effectiveness in Hospitals

- Employee Training and Engagement: Training healthcare staff in effective communication, empathy, and patient-centric care.
- Future Trends in Healthcare CRM: Exploring emerging technologies and trends shaping the future of CRM in hospitals.

Suggested Readings

1. Healthcare Relationship Marketing: Strategy, Design and Measurement" by Neil Klar and Rajendra Srivastava
2. "Patient Centricity: Beyond Customer Service to Customer Intimacy" by Gaurav Baheti

Course Outcome (CO)

CO #	Description
CO -1	Upon completion of this course, students will be able to explain the importance of Customer Relationship Management (CRM) in the healthcare context, outlining its significance in enhancing patient satisfaction, loyalty, and overall healthcare experience.
CO-2	Students will demonstrate an understanding of the principles of patient-centric care, employing techniques to build effective patient relationships, foster trust, and engage in empathetic communication.
CO-3	Upon completing this course, students will be capable of analyzing patient data to segment patient groups, personalize healthcare services, and design communication strategies for effective patient engagement.
CO-4	Students will develop skills in collecting, analyzing, and interpreting patient feedback, enabling them to address patient complaints, resolve issues, and implement quality improvement initiatives
CO-5	Upon completion, students will be prepared to evaluate the effectiveness of CRM strategies using key performance indicators (KPIs), enabling them to make informed decisions for continuous improvement in patient satisfaction and engagement

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Upon completion of this course, students will be able to explain the importance of Customer Relationship Management (CRM) in the healthcare context, outlining its significance in enhancing patient satisfaction, loyalty, and overall healthcare experience.	1, 2, 3, 4	1, 2, 3, 6
CO-2	Students will demonstrate an understanding of the principles of patient-centric care, employing techniques to build effective patient relationships, foster trust, and engage in empathetic communication.	1, 2, 3, 4, 6	1, 2, 3, 6, 8

CO-3	Upon completing this course, students will be capable of analyzing patient data to segment patient groups, personalize healthcare services, and design communication strategies for effective patient engagement.	1, 2, 3, 4, 5	1, 2, 3, 4, 6
CO-4	Students will develop skills in collecting, analyzing, and interpreting patient feedback, enabling them to address patient complaints, resolve issues, and implement quality improvement initiatives	1, 2, 3, 4, 5	1,2, 3, 6, 7, 8
CO-5	Upon completion, students will be prepared to evaluate the effectiveness of CRM strategies using key performance indicators (KPIs), enabling them to make informed decisions for continuous improvement in patient satisfaction and engagement	1, 2, 3, 4, 5	1, 2, 3 5, 6, 7

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	3	3	2	3		
CO 2	3	3	2	3		2
CO 3	3	2	3	3	1	
CO 4	3	3	2	3	2	
CO 5	3	2	2	3	2	
Average	3	2.6	2.2	3	1.6	2

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	2	2	3			2		
CO 2	3	3	2			2		1
CO 3	3	3	2	2		2		
CO 4	3	3	2			2	2	1
CO 5	3	3	2		2	1	2	
Average	2.8	2.8	2.2	2	2	1.8	2	1

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Hospital Law & Ethics

Semester: 5

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Subject Code:

Syllabus

Module-I

- Law & Ethics : Concept & Comparison Essentials of Valid Contract
- Types of Contracts
- Importance of Law in Hospitals

Module-II

- Overview of
 - Consumer Protection Act 1986
 - West Bengal Clinical Establishment Act 2000
 - Medical Termination of Pregnancy Act 1971
 - Organ Transplantation Act 1994
 - Bio-Medical Waste Management & Handling Rules
 - Pre Natal Diagnostic Techniques Act 1994

Module-III

- Ethical Principles in Medicine Hippocratic Oath (Declaration of Geneva)
- Consent : Types & Importance

Module-IV

- Indian Medical Council Act, 1956
- Indian Nursing Council Act
- Declaration of Helsinki
- Telemedicine and application of laws in telemedicine
- Euthanasia: Concept, Types, Status in different countries

Suggested Readings:

1. R.K. Chaube, Consumer Protection and the Medical profession, Jaypee Publishing, New Delhi, 2000.
2. Commercial Laws – N.D.Kapoor
3. Medical Ethics – Francis, D'souza
4. Prabhakara G.N: Professional Medical Ethics

Course Outcome (CO)

CO#	CO
CO 01	Help students to contextualize the constitutional dimension to 'right to health', obligations of medical professionals and complex issues such as 'consent' and 'confidentiality'
CO 02	To apply the knowledge of ethics in the functioning of the hospital.
CO 03	To be able to handle various issues related to healthcare setup and also manage the hospital with the various issues that can arise from the legal perspective.
CO 04	To recognize and train the workforce to meet the challenges of changing dynamics in healthcare scenario in terms of the regulations that govern the operational aspects of the hospital
CO 05	To be able to demonstrate the necessary legal & ethical knowledge, skill and competencies required for good administrator as significant contributor in healthcare.

CO-PO-PSO Mapping

CO#	CO	POs	PSOs
CO 01	Help students to contextualize the constitutional dimension to 'right to health', obligations of medical professionals and complex issues such as 'consent' and 'confidentiality'	1,2,3,4	1,2,3,6
CO 02	To apply the knowledge of ethics in the functioning of the hospital.	1,2,3,4,6	1,2,3,6,8
CO 03	To be able to handle various issues related to healthcare setup and also manage the hospital with the various issues that can arise from the legal perspective.	1,2,3,4,5	1,2,3,4,6
CO 04	To recognize and train the workforce to meet the challenges of changing dynamics in healthcare scenario in terms of the regulations that govern the operational aspects of the hospital	1,2,3,4,5	1,2,3,6,7,8
CO 05	To be able to demonstrate the necessary legal & ethical knowledge, skill and competencies required for good administrator as significant contributor in healthcare.	1,2,3,4,5	1,2,3,5,6,7

CO-PO Matrix

	PO 01	PO 02	PO 03	PO 04	PO 05	PO 06
CO 01	3	3	2	3	-	-
CO 02	3	3	2	3	-	2
CO 03	3	2	3	3	1	-
CO 04	3	3	2	3	2	-
CO 05	3	2	2	3	2	-
Average	3	2.6	2.2	3	1.6	2

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

CO-PSO Matrix

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 01	2	2	3	-	-	2	-	-
CO 02	3	3	2	-	-	2	-	1
CO 03	3	3	2	2	-	2	-	-
CO 04	3	3	2	-	-	2	2	1
CO 05	3	3	2	-	2	1	2	-
Average	2.8	2.8	2.2	2	2	1.8	2	1

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

Subject: Business Research

Semester: 6

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Syllabus

Module-I: Introduction to Business Research: An overview of Business research process, Consumer research, Problem formulation, research scenario in Indian corporate sector.

Module-II: Problem identification and Research Design: Problem identification and definition, research proposal, research type—exploratory, descriptive, conclusive research, value and cost information.

Module-III: Data Resources: Secondary data sources, online data sources, primary data collection method, online surveys, questionnaire preparation, characteristics of good questionnaire, scale reliability checking of good questionnaire, Cronbach – Alpha measurement.

Module-IV: Aptitude Measurement & Scaling Techniques: Elementary introduction to Measurement scale, rating scales, Likert & Semantic different scale.

Module-V: Hypothesis: Meaning, types, characteristics, Formulation of hypothesis, Errors in hypothesis testing.

Module-VI: Sampling Plan: Universe, sample frame, sampling technique, sampling & non sampling errors, probability & non probability samples, simple random sampling, stratified random sampling, systematic sampling, Quota sampling, Judgmental sampling.

Module-VII: Data processing and Analysis: Tabulation of data, editing coding, Univariate, Bivariate & Multivariate data analysis, Measurement of Association, correlation, regression, non parametric and parametric statistics, Multivariate Analysis – Factor analysis (Theory only).

Module-VIII: Market Research Application: Product research, Stages of NPD, advertising research, sales & market research, Media research.

Suggested Readings

1. Business Research Methods- Alan Bryman, Emma Bell
2. Business Research Methods- Willam G. Zikmund
3. Business Research Methods- Naval Bajpai

Course Outcome (CO)

CO #	Description
CO -1	BR analyses the concepts of Business Research and identifies the evolution of Business Research throughout the organization.
CO-2	In Problem identification and Research Design students will learn Problem identification and definition, research proposal, research type—exploratory, descriptive, conclusive research, value and cost information.
CO-3	In Data Resources students will learn Secondary data sources, online data sources, primary data collection method, online surveys, questionnaire preparation, characteristics of good questionnaire, scale reliability checking of good questionnaire, Cronbach – Alpha measurement
CO-4	In Aptitude Measurement & Scaling Techniques students will learn elementary introduction to Measurement scale, rating scales, Likert & Semantic different scale.
CO-5	In Hypothesis students will learn Meaning, types, characteristics, Formulation of hypothesis, Errors in hypothesis testing.
CO-6	In Sampling Plan students will learn Universe, sample frame, sampling technique, sampling & non sampling errors, probability & non probability samples, simple random sampling, stratified random sampling, systematic sampling, Quota sampling, Judgmental sampling.
CO-7	In Data processing and Analysis students will learn, Tabulation of data, editing coding, Univariate, Bivariate & Multivariate data analysis, Measurement of Association, correlation, regression, non-parametric and parametric statistics, Multivariate Analysis – Factor analysis
CO-8	In Market Research Application students will learn Product research, Stages of NPD, advertising research, sales & market research, Media research.

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	BR analyses the concepts of Business Research and identifies the evolution of Business Research throughout the organization.	1,2,3,4,5,6	1,2,3,4,5,8
CO-2	In Problem identification and Research Design students will learn Problem identification and definition, research proposal, research type—exploratory, descriptive, conclusive research, value and cost information.	1,3,5,6	1,3,4,5,6,7,8
CO-3	In Data Resources students will learn Secondary data sources, online data sources, primary data collection method, online surveys, questionnaire preparation, characteristics of good questionnaire, scale reliability checking of good questionnaire, Cronbach – Alpha measurement	1,2,3,5,6	1,2,3,5,6,8
CO-4	In Aptitude Measurement & Scaling Techniques students will learn Elementary introduction to Measurement scale, rating scales, Likert & Semantic different scale.	1,2,4,5,6	1,2,4,5,6,7
CO-5	In Hypothesis students will learn Meaning, types, characteristics, Formulation of hypothesis, Errors in hypothesis testing.	1,2,4,5,6	1,2,3,4,5,7
CO-6	In Sampling Plan students will learn Universe, sample frame, sampling technique, sampling & non sampling errors, probability & non	1,2,3,5,6	1,2,3,5,6,7,8

	probability samples, simple random sampling, stratified random sampling, systematic sampling, Quota sampling, Judgmental sampling.		
CO-7	In Data processing and Analysis students will learn, Tabulation of data, editing coding, Univariate, Bivariate & Multivariate data analysis, Measurement of Association, correlation, regression, non-parametric and parametric statistics, Multivariate Analysis – Factor analysis (Theory only)	1,2,3,5	3,4,5,6,7,8
CO-8	In Market Research Application students will learn Product research, Stages of NPD, advertising research, sales & market research, Media research.	1,2,3,5,6	1,2,3,5,6,8

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	3	2	3	3	3	3
CO 2	2	-	2	-	3	3
CO 3	3	3	3	-	2	3
CO 4	2	3	-	3	2	2
CO 5	3	3	-	2	3	3
CO 6	3	3	2	-	3	2
CO 7	2	3	2	-	2	-
CO 8	3	3	3	-	3	3
Average	2.63	2.86	2.50	2.67	2.63	2.71

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	3	3	3	3	3	-	-	2
CO 2	3	-	3	3	3	1	3	2
CO 3	3	2	3	-	2	3	-	2
CO 4	2	2	-	3	3	1	1	-
CO 5	2	3	2	3	2	-	3	-
CO 6	3	3	2	-	3	1	1	3
CO 7	-	-	2	2	2	1	1	3
CO 8	3	3	3	-	3	2	-	3
Average	2.71	2.67	2.57	2.80	2.63	1.50	1.80	2.50

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Quality in Healthcare

Semester: 6

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Subject Code:

Syllabus

Module-I

- Quality- concept & definitions
- Vision, Mission & Policy statements
- Customer perception of quality
- Translating needs into requirements, VOC, Customer Retention
- Definition of Service Quality and its significance, dimensions of service quality
- Contribution of Quality Gurus- Deming, Donabedian, Juran

Module-II

- Measuring Service Quality
- Service Quality Gap Model
- Service Quality Standards
- Strategies for Improving Service Quality, Monitoring Service Quality
- Quality Management System
- Concept of TQM
- ISO Certification for services & Accreditation of Hospitals

Module-III

- Techniques of Quality Management: Improving Hospital Performance - Patient Participation
- Quality Health Care through Patient Satisfaction - Conceptual model of potential Contribution
- quality in the health care system-Implementation of quality management system in improving health care system
- Attributes of a good Doctor-Patient Relationship

Module-IV

- Quality planning, Quality Manual Benchmarking

- QCI (functions, structure)
- Accreditation with special emphasis on NABH, NABL Accreditation and JCI (sequential process of getting certified)
- Six Sigma, Lean Thinking, Kaizen, 5S

Suggested Readings:

1. Quality management in healthcare ,S.K Joshi---JAYPEE
2. Hospital administration , CM Francis & Mario C Desouza---JAYPEE
3. Hospital and health services administration principles and practice, Syed Amin Tabish---OXFORD
4. A Text on Total Quality Management, Asish Bhatnagar-Vrinda Publication

Course Outcome (CO)

CO#	CO
CO 01	The students will have an understanding of the concept of quality, vision, mission statements of an organization and will be able to develop the same for organizations
CO 02	The students will be able to explain service quality and measure it in health care organizations
CO 03	The students will be able to explain the concept of TQM and later be instrumental in applying it in the organization.
CO 04	The knowledge of accreditation processes for health care organizations will enable students identify the requirements of the organization to conform to standards of accreditation

CO-PO-PSO Mapping

CO#	CO	POs	PSOs
CO 01	The students will have an understanding of the concept of quality, vision, mission statements of an organization and will be able to develop the same for organizations	1,3,4,5	1,3,4,6,7,8
CO 02	The students will be able to explain service quality and measure it in health care organizations	1,2,3,4,5	1,2,3,4,6,7,8
CO 03	The students will be able to explain the concept of TQM and later be instrumental in applying it in the organization.	1,2,3,5,6	1,3,4,5,6,7,8
CO 04	The knowledge of accreditation processes for health care organizations will enable students identify the requirements of the organization to conform to standards of accreditation	1,2,3,4,5	1,4,6,7,8

CO-PO Matrix

	PO 01	PO 02	PO 03	PO 04	PO 05	PO 06
CO 01	3	-	3	2	2	-
CO 02	3	3	3	2	2	-
CO 03	3	3	3	-	2	2
CO 04	3	3	2	2	1	-
Average	3	3	2.6	2	1.6	2

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 01	3	-	3	2	-	3	2	2
CO 02	3	3	3	2	-	3	2	2
CO 03	3	-	3	3	2	2	2	2
CO 04	3	-	-	2	-	-	2	2
Average	3	3	3	2.2	2	2.5	2	2

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Hospital Planning & Designing

Semester: 6

Subject Category: MC

Credit: 4 (L:3, T:1)

Syllabus

Module-I

- Functional areas in hospital services management
- Difference types of hospital services
- Site Selection and Analysis: Factors influencing site selection, environmental considerations, and site assessment.,.

Module-II

- Infection Control and Bio-Safety: Designing for infection prevention, clean zones, and isolation areas.
- Sustainability in Healthcare Design: Green building concepts, energy efficiency, and resource conservation in hospital design.

Module-III

- Outpatient Department (OPD) Design: Layout, waiting areas, examination rooms, and specialty clinics.
- Inpatient Department (IPD) Design: Ward layouts, patient rooms, nursing stations, and support spaces.
- Operation Theatres and Surgical Suites: Designing sterile environments, OT layout, and integration of technology

Suggested Readings

1. "Hospital and Healthcare Facility Design" by Richard L. Miller and Earl S. Swensson
2. "Facilities Planning for Healthcare Institutions" by Cynthia J. Hayward
3. "Hospital Planning and Designing" by G. D. Kunders

Course Outcome (CO)

CO #	Description
CO -1	Upon completing this course, students will be able to design hospital facilities that address unique challenges in healthcare, considering healthcare management principles and employing ethical values to enhance patient care and experience.
CO-2	Students will demonstrate the ability to apply infection control, bio-safety measures, and sustainability concepts in hospital planning, ensuring the safety of patients, staff, and the environment.
CO-3	Upon completion, students will be able to design outpatient and inpatient departments that cater to the diverse needs of patients, staff, and healthcare processes, while ensuring effective healthcare delivery and quality.
CO-4	Students will acquire the skills to design operation theatres and surgical suites that align with healthcare standards, enabling critical decision-making and smooth surgical processes. Students will acquire the skills to design operation theatres and surgical suites that align with healthcare standards, enabling critical decision-making and smooth surgical processes.
CO-5	Upon completion, students will be able to integrate interpersonal and communication skills, demonstrating the ability to collaborate within multidisciplinary teams and effectively communicate design proposals to stakeholders.
CO-6	Students will develop an understanding of the legal and ethical considerations in hospital planning and design, ensuring compliance with industry standards and fostering a commitment to moral values.
CO-7	Upon completing this course, students will be able to critically analyze and evaluate healthcare design solutions, demonstrating innovative leadership skills and contributing to the improvement of healthcare facilities.

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Upon completing this course, students will be able to design hospital facilities that address unique challenges in healthcare, considering healthcare management principles and employing ethical values to enhance patient care and experience.	1, 2, 5	1, 4, 5, 8
CO-2	Students will demonstrate the ability to apply infection control, bio-safety measures, and sustainability concepts in hospital planning, ensuring the safety of patients, staff, and the environment.	1, 2, 3, 5, 6	1, 3, 4, 6, 8
CO-3	Upon completion, students will be able to design outpatient and inpatient departments that cater to the diverse needs of patients, staff, and healthcare processes, while ensuring effective healthcare delivery and quality	1, 2, 3, 5	1, 3, 4, 5, 6
CO-4	Students will acquire the skills to design operation theatres and surgical suites that align with healthcare standards, enabling critical decision-making and smooth surgical processes Students will acquire the skills to design operation theatres and surgical suites that align with healthcare standards, enabling critical decision-making and smooth surgical processes.	1, 2, 3, 4	1, 4, 6, 7, 8
CO-5	Upon completion, students will be able to integrate interpersonal and communication skills, demonstrating the ability to collaborate within multidisciplinary teams and effectively communicate design proposals to stakeholders.	1, 2, 3, 5, 6	1, 4, 6, 7
CO-6	Students will develop an understanding of the legal and ethical considerations in hospital planning and design, ensuring compliance with industry standards and fostering a commitment to moral values.	1, 2 3, 4	1, 2, 3, 5, 6, 8
CO-7	Upon completing this course, students will be able to critically analyze and evaluate healthcare design solutions, demonstrating innovative leadership skills and contributing to the improvement of healthcare facilities.	1,2,4,6	1, 2, 4, 6, 7, 8

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	3	3			2	
CO 2	3	3	2		3	2
CO 3	3	3	2		2	
CO 4	3	3	2	2		
CO 5	3	3	2		2	2
CO 6	3	3	2	1		
CO 7	3	3		1		1
Average	3	3	2	1.33	2.25	1.67

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	3			2	2			1
CO 2	3		3	2		2		1
CO 3	3		3	2	2	2		
CO 4	3			2		2	1	1
CO 5	3			3		2	2	
CO 6	3	2	3		2	2		1
CO 7	3	2		2		2	2	1
Average	3	2	3	2.16	2	2	1.67	1

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Occupational Health

Semester:

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Subject Code:

Syllabus

Module-I: Overview of Occupational Health & Occupational Hazards

- Concept of occupational and work-related health- concept & history
- Occupational environment-man & physical, chemical & biological agents.
- Occupational hazards-physical, chemical, mechanical, psychological hazards
- Ergonomics

Module-II: Occupational diseases

- Pneumoconiosis, occupational poisoning – causation, prevention
- Occupational Hazards & Diseases typical to the Healthcare Industry

Module-III: Industrial Occupational health

- Accidents & injury in industries
- Radiation hazards – effects, control & prevention
- Control of hazards in industries.

Module-IV: Laws Related to Occupational health in India

- Indian Factories Act 1948
- ESI Act 1948.
- Workman's Compensation Act 1952

Suggested Readings:

1. Preventive & Social Medicine – K. Park; Banarasidas Bhanot Publications
2. Preventive & Social Medicine – Gupta, Mahajan

Course Outcome (CO)

CO#	CO
CO 01	Apply risk management principles to anticipate, identify, evaluate and control physical, chemical, biological and psychosocial hazards.
CO 02	Collect, manage, and interpret information and data to identify trends and issues in the workplace, unique to each occupational group.
CO 03	Design, support, and evaluate health and safety programs for all categories of employees in healthcare organizations.
CO 04	Interpret and apply legislative requirements, industry standards, and best practices in healthcare organizations.
CO 05	Use a range of effective communication skills and methods to clearly and briefly convey regulatory and technical information and data to designated audiences.

CO-PO-PSO Mapping

CO#	CO	POs	PSOs
CO 01	Apply risk management principles to anticipate, identify, evaluate and control physical, chemical, biological and psychosocial hazards.	1,2,3,5,6	1,2,3,4,5,6,7
CO 02	Collect, manage, and interpret information and data to identify trends and issues in the workplace, unique to each occupational group.	1,2,3,5,6	1,2,3,4,5,6,7
CO 03	Design, support, and evaluate health and safety programs for all categories of employees in healthcare organizations.	1,2,3,5,6	1,2,3,4,5,6,7
CO 04	Interpret and apply legislative requirements, industry standards, and best practices in healthcare organizations.	1,2,3,4,5,6	1,2,3,4,5,6,7,8
CO 05	Use a range of effective communication skills and methods to clearly and briefly convey regulatory and technical information and data to designated audiences.	1,2,3,4,5,6	1,2,3,4,5,6,7,8

CO-PO Matrix

	PO 01	PO 02	PO 03	PO 04	PO 05	PO 06
CO 01	3	3	3	-	3	3
CO 02	3	3	3	-	3	3
CO 03	3	3	3	-	3	3
CO 04	3	3	3	2	3	3
CO 05	3	3	3	2	3	3
Average	3	3	3	2	3	3

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 01	3	3	3	2	2	2	2	-
CO 02	3	3	3	2	2	2	2	-
CO 03	3	3	3	2	2	2	2	-
CO 04	3	3	3	2	2	2	2	2
CO 05	3	3	3	2	2	2	2	2
Average	3	3	3	2	2	2	2	2

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Entrepreneurship Development

Semester: 6

Subject Category: NM

Credit: 4 (L:3, T:1)

Syllabus

Module-I

1. **Entrepreneurship:** Introduction, Entrepreneur as risk taker, organizer, innovator, characteristics, difference between entrepreneur and manager, functions, types, difference between entrepreneur and intrapreneur. (6 sessions)
2. **Entrepreneurial environment:** Factors, types of ownership, Govt policy for small scale enterprise, small enterprises in international business, major constraints. (4 sessions)
3. **Business plan preparation:** Project meaning, Project identification and classification, internal and external constraints, project objectives, research and survey, project life cycle. (4 sessions)

Module-II

1. **Launching of small business:** Investment analysis, tools of analysis – ratio analysis, return on capital employed, return on total investments, capital budgeting, Plant location, Plant layout, Product design, Product inspection, Location inspection, Inspection tools – Quality control, Technology, marketing management, human resource management, accounting process. (6 sessions)
2. Small business growth strategies and sickness in small business. (2 sessions)
3. Case studies and presentation. (2 sessions)

Module-III

1. **Innovation: What and Why?:** Innovation as a core business process, Sources of innovation, Knowledge push vs. need pull innovations. Class Discussion- Is innovation manageable or just a random gambling activity? (2 sessions)
2. **Building an Innovative Organization:** Creating new products and services; Exploiting open innovation and collaboration, Use of innovation for starting a new venture (2 sessions)
3. Class Discussion: Co-operating across networks vs. 'go-it-alone' approach (2 sessions)

Module-IV

1. **SWOT Analysis:** Internal and External Factors, How to Conduct a SWOT Analysis; Why Small Business Should Conduct a SWOT Analysis; The Four Quadrants of SWOT Analyses; How to Act Upon Your SWOT Analysis - Acting on Strengths; Shoring up Weaknesses, Seizing Opportunities, Mitigating Threats (3 sessions)
2. **Diffusion of Innovation:** Rationale behind the Diffusion of Innovation; Five adopter categories – Innovators, Early Adopters, Early Majority, Late Majority, Laggards; Importance of the Diffusion of Innovation (3 sessions)

3. **Co-innovation and Open Innovation:** Introduction to Co-Innovation and Open Innovation; Closed Innovation: Challenges; Reasons to move away from Closed Innovation; Co-innovation and Open Innovation Models; Co-innovation and Open Innovation Capabilities; Corporate–Startup Collaborations Benefits. (2 sessions)
4. Case Discussion (2 sessions)

Suggested Readings

1. David A.Kirby, “ Entrepreneurship “ Tata McGRaw Hills
2. Jasmer singh Sain, Entrepreneurship and small Business” Deep and Deep publication
3. Shankar Raj, “Entrepreneurship Theory and Practice” Vijay Nicole Imprints Pvt ltd.
4. Khanka, S.S, “Entrepreneurship Development”, S. Chand & company
5. Vasant Desai, “Fundamentals of Entrepreneurship “Himalaya Publishing House.,

Course Outcome (CO)

CO #	Description
CO -1	Identify qualities of entrepreneurs
CO-2	Develop the skill to write entrepreneurial project proposal
CO-3	Understand the concept and application of various entrepreneurship models
CO-4	Understand various schemes supporting entrepreneurship
CO-5	Develop the skill, mindset and competence to think creative and innovative

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Identify qualities of entrepreneurs	1,2,3,4,5,6	1,2,3,4,5,6,7,8
CO-2	Develop the skill to write entrepreneurial project proposal	1,3,5,6	1,3,4,5,6,7,8
CO-3	Understand the concept and application of various entrepreneurship models	1,2,3,5,6	1,2,3,5,6,7,8
CO-4	Understand various schemes supporting entrepreneurship	1,2,4,5,6	1,2,4,5,6,8
CO-5	Develop the skill, mindset and competence to think creative and innovative	1,2,4,5,6	1,2,3,4,5,7

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	3	2	3	3	3	3
CO 2	3	-	3	-	3	3
CO 3	3	3	3	-	3	3
CO 4	2	3	-	3	2	2
CO 5	3	2	-	2	3	3
Average	2.80	2.50	3.00	2.67	2.80	2.80

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	3	3	3	3	3	3	3	3
CO 2	2	-	3	3	3	3	3	3
CO 3	3	3	2	-	2	3	3	3
CO 4	2	2	-	3	3	3	-	3
CO 5	2	3	2	2	2	-	2	-
Average	2.4	2.75	2.5	2.75	2.6	3	2.75	3

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Epidemiology & Biostatistics

Semester: 7

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Syllabus

Module-I

- Principles of Epidemiology
- Natural History of disease
- Epidemiology of communicable & non-communicable diseases, disease transmission

Module-II

- Host defense immunizing agents, cold chain, immunization, disease monitoring and surveillance.
- Screening and surveys
- Investigation of an epidemic and role of hospital in its control.
- Concept of Clinical Trial and its different phases

Module-III

- Introduction to Biostatistics
- Introduction to Data Analysis in R
- Probability and Bayes Theorem

Module-IV

- Continuous and Discrete Distributions
- Hypothesis Testing
- Correlation and Linear Models
- Clustering

Suggested Readings :

1. Park's Textbook of Preventive and Social Medicine, K. Park.
2. Epidemiology: Beyond the Basics" by Moyses Szklo and Javier Nieto
3. "Principles of Epidemiology" by Ray M. Merrill

4. Biostatistics: The Bare Essentials" by Geoffrey R. Norman and David L. Streiner
5. Biostatistics: A Foundation for Analysis in the Health Sciences" by Wayne W. Daniel and Chad L. Cross

Course Outcomes (CO)

CO#	CO
CO 01	The students will be able to understand the principles of Epidemiology and describe the natural history of diseases. Analyze the epidemiology of communicable and non-communicable diseases, including disease transmission patterns.
CO 02	They will be able to explain the concepts of host defence, immunizing agents, and cold chain management for immunization. Apply disease monitoring and surveillance techniques to assess public health trends.
CO 03	The students can demonstrate proficiency in conducting screening and surveys for disease assessment and public health planning. Investigate and analyze the factors contributing to an epidemic and assess the role of hospitals in controlling its spread.
CO 04	They will be able to apply hypothesis testing methods to evaluate research hypotheses in epidemiological and public health studies. Analyze correlations and linear models to understand the relationships between variables in health-related datasets
CO 05	Students can explore clustering techniques to identify patterns and subgroups within health data. Utilize biostatistical methods to draw meaningful conclusions and support evidence-based public health interventions.

CO-PO-PSO Mapping

CO#	CO	POs	PSOs
CO 01	The students will be able to understand the principles of Epidemiology and describe the natural history of diseases. Analyze the epidemiology of communicable and non-communicable diseases, including disease transmission patterns.	1,2,3,4	1,2,3,6
CO 02	They will be able to explain the concepts of host defence, immunizing agents, and cold chain management for immunization. Apply disease monitoring and surveillance techniques to assess public health trends.	1,2,3,4, 6	1,2,3,6,8
CO 03	The students can demonstrate proficiency in conducting screening and surveys for disease assessment and public health planning. Investigate and analyze the factors contributing to an epidemic and assess the role of hospitals in controlling its spread.	1,2,3,4,5	1,2,3,4,6
CO 04	They will be able to apply hypothesis testing methods to evaluate research hypotheses in epidemiological and public health studies. Analyze correlations and linear models to understand the relationships between variables in health-related datasets	1,2,3,4,5	1,2,3,6,7,8
CO 05	Students can explore clustering techniques to identify patterns and subgroups within health data. Utilize biostatistical methods to draw meaningful conclusions and support evidence-based public health interventions.	1,2,3,4,5	1,2,3,5,6,7

PO-CO Mapping

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	3	3	2	3	-	-
CO 2	3	3	2	3	-	2
CO 3	3	2	3	3	1	-
CO 4	3	3	2	3	2	-
CO 5	3	2	2	3	2	-
Average	3.00	2.60	2.20	3.00	1.67	2.00

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	2	2	3	-	-	2	-	-
CO 2	3	3	2	-	-	2	-	1
CO 3	3	3	2	2	-	2	-	-
CO 4	3	3	2	-	-	2	2	1
CO 5	3	3	2	-	2	1	2	-
Average	2.80	2.80	2.20	2.00	2.00	1.80	2.00	1.00

1-Low Correlation; 2- Moderate Correlation; 3- Substantial Correlation

Subject: Hospital Waste Management

Semester: 7

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Subject Code:

Syllabus

Module-I: Waste Categories & Impact

- Meaning, importance and aims of biomedical waste management
- Major sources of hospital biomedical waste
- Classification and categories of hospital waste
- Health impacts – direct and indirect hazards – potential hazards – basic information – infection – infection agents
- Diseases associated with biomedical waste
- Safety measures to be adopted while handling biomedical waste

Module-II: Collection, Storage & Disposal of Hospital Waste

- Collection, segregation, transportation and storage of biomedical waste
- Disposal techniques - Pre-treatment-chemical disinfection, autoclave, hydroclave, microwave irradiation Final disposal- incineration, safe pit for sharps, landfill, deep burial

Module-III: Rules regarding BMW

- Biomedical Waste Management and Handling Rules,1998
- Biomedical Waste Management (Amendment) Rules,2016 and 2018
- Fundamentals of healthcare waste management as per WHO
- CPCB guidelines , BARC guidelines of radioactive waste disposal

Module-IV: Reduce, Recycle, Reuse

- Waste minimization , recycling , re use –
- Protective equipment usage occupational health programmers – safety – emergency practices
- Management of non-clinical support devices
- Hospital waste management – budget allocation , maintenance of records & annual reports

Suggested Readings:

1. Hospital waste management and its monitoring, Madhuri Sharma---JAYPEE
2. Principles of Hospital Management - S. A. Tabish, OUP
3. Hospital Management - S. L. Goel , Deep & Deep Publications
4. Hospital Administration – Francis, Jaypee
5. Bio-Medical Waste Act & Rules Govt. of India
6. Current Issues in BMW Waste Handling-ISHA, Bangalore

Course Outcome (CO)

CO#	CO
CO 01	Describe the components of Bio Medical Waste Management in hospitals and the laws governing it.
CO 02	Discuss the bio medical waste collection systems, route optimization techniques and processing of such wastes.
CO 03	Outline the design, operation, and maintenance of different methods of treatment and disposal of hospital wastes.
CO 04	Explain the operation, and maintenance of sanitary landfill, incineration, deep burial etc.
CO 05	Keep abreast of the recent trends in the management of hospital wastes in keeping with the law of the land and pave the way for a healthier environment
CO 06	Understand the implications of bio medical waste handling and educate all categories of the hospital staff on occupational safety

CO-PO-PSO Mapping

CO#	CO	POs	PSOs
CO 01	Describe the components of Bio Medical Waste Management in hospitals and the laws governing it.	1,2,3,4,5	1,3,6,7,8
CO 02	Discuss the bio medical waste collection systems, route optimization techniques and processing of such wastes.	1,2,3,4,5,6	1,3,4,5,6,7,8
CO 03	Outline the design, operation, and maintenance of different methods of treatment and disposal of hospital wastes.	1,2,3,5,6	1,2,3,4,5,7
CO 04	Explain the operation, and maintenance of sanitary landfill, incineration, deep burial etc.	1,2,3,5,6	1,3,4,6,7
CO 05	Keep abreast of the recent trends in the management of hospital wastes in keeping with the law of the land and pave the way for a healthier environment	1,2,3,4,5	1,2,3,4,6,7
CO 06	Understand the implications of bio medical waste handling and educate all categories of the hospital staff on occupational safety	1,2,3,4,5,6	1,2,3,4,5,7,8

CO-PO Matrix

	PO 01	PO 02	PO 03	PO 04	PO 05	PO 06
CO 01	3	2	2	3	2	-
CO 02	3	2	2	3	2	1
CO 03	3	3	2	-	2	1
CO 04	3	3	2	-	2	1
CO 05	3	3	2	3	2	-
CO 06	3	3	2	3	2	1
Average	3	2.67	2	3	2	1

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 01	3	-	3	-	-	2	2	1
CO 02	3	-	3	2	2	2	2	1
CO 03	3	3	3	2	2	-	2	-
CO 04	3	-	3	2	-	2	2	-
CO 05	3	3	3	2	-	2	2	-
CO 06	3	3	3	2	2	-	2	1
Average	3	3	3	2	2	2	2	1

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Disaster Management

Semester: 7

Subject Category: MC

Credit: 4 (L: 3, T: 1)

Subject Code:

Syllabus

Module-I

- Disaster – concept, definition and types
- Health problems related to various types of disaster
- Disaster Cycle, phases in Disaster management & course of action
- Principles of disaster management & mass casualty management
- Ministries involved in Disaster Management
- Role of various agencies in disaster management

Module-II

- Hospital Disaster Plan
- Objectives of Disaster plan
- Hospital Disaster Management Committee
- Organisation of Disaster Management in the Hospital
- Disaster manual
- Hospital networking in disaster management

Module-III

- Fire Hazards and Fire Manual Guideline
- Introduction - Elements of fire - Fire hazard - Cause of Hospital Fire - Classification of fire
- Fire protection - Fire points and Escape Route - Risk evaluation - meaning of fire manual -
- Guideline - Elements of Fire safety - Fire safety training - Do's and Don'ts for electrical fire prevention - Action to be taken in case of fire in a Hospital

Module-IV

- Changing concept of disaster management,
- Recent trends and advancement in
- disaster management
- Lessons from developed countries
- Disaster Management Act, 2005
- Role of National Disaster Management Authority (NDMA)

Suggested Readings:

1. Hospital Administration, D.C Joshi, Mamta Joshi, Jaypee
2. Park's Textbook of Preventive and Social Medicine, K. Park, Banarasidas Bhanot
3. Hospital Administration, Francis & D'souza, Jaypee

Course Outcome (CO)

CO#	CO
CO 01	Basic conceptual understanding of disasters and its various types.
CO 02	Understand approaches of Disaster Risk Reduction (DRR) and the relationship between vulnerability, disasters, disaster prevention and risk reduction
CO 03	Understand Medical and Psycho-Social Response to Disasters.
CO 04	Prevent and control Public Health consequences of Disasters
CO 05	Awareness of Disaster Risk Management and formulation of disaster manuals in healthcare organizations.
CO 06	Build skills to promptly respond to disasters.

CO-PO-PSO Mapping

CO#	CO	POs	PSOs
CO 01	Basic conceptual understanding of disasters and its various types.	1,2,3,5,6	1,3,5,7,8
CO 02	Understand approaches of Disaster Risk Reduction (DRR) and the relationship between vulnerability, disasters, disaster prevention and risk reduction	1,2,3,4,5,6	1,3,5,7,8
CO 03	Understand Medical and Psycho-Social Response to Disasters.	1,2,3,5,6	1,2,3,4,5,6
CO 04	Prevent and control Public Health consequences of Disasters	1,2,3,5,6	1,2,3,4,5,6
CO 05	Awareness of Disaster Risk Management and formulation of disaster manuals in healthcare organizations.	1,2,3,4,5,6	1,3,4,5,6,8
CO 06	Build skills to promptly respond to disasters.	1,2,3,4,5,6	1,3,4,5,6,8

CO-PO Matrix

	PO 01	PO 02	PO 03	PO 04	PO 05	PO 06
CO 01	3	3	3	-	3	2
CO 02	3	3	3	2	3	2
CO 03	3	3	3	-	3	2
CO 04	3	3	3	-	3	2
CO 05	3	3	3	2	3	2
CO 06	3	3	3	2	3	2
Average	3	3	3	2	3	2

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

CO-PSO Matrix

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 01	3	-	3	-	3	-	2	2
CO 02	3	-	3	-	3	-	2	2
CO 03	3	3	3	2	3	2	-	-
CO 04	3	3	3	2	3	2	-	-
CO 05	3	-	3	2	3	2	-	2
CO 06	3	-	3	2	3	2	-	2
Average	3	3	3	2	3	2	2	2

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

Subject: Psychology for Business

Semester: 7

Subject Category: NM

Credit: 4 (L:3, T:1)

Syllabus

Module-I: Introduction to Business Psychology

- Business Psychology: What Is It?
- Why Should Business Psychology be of Interest?
- Bringing the Business World into Focus
- Impact Through Innovation
- Impact Through Leadership
- Impact on Organisations and Entrepreneurs
- Practical Applications of Business Psychology

Module-II: Business Psychology and Financial Decision-Making

- Heuristics vs. Business Psychology
- Being Overconfident
- Overconfidence when Investing
- Excessive Trading
- Luck and Skill
- Incorrect Anchoring
- Framing Losses
- Attitudes Toward Reward and Risk
- Fearing Loss
- Chasing Trends
- Lack of Self-Control and Emotional Investing
- Overcoming Investor Biases

Module-III: The Role of Quantitative Psychology

- Quantitative Psychology
- Methods for Measuring Human Attributes
- Designing Research
- Psychological Data Analysis

- Mathematical and Statistical Modelling
- Testing Hypotheses
- The Advantages of a Scientific Framework
- Correlation of Variables

Module-IV: Business Strategy

- The Role of Business Psychology in Strategising
- Old School Business Planning
- New School Business Strategising

Module-V: The Psychology of Health and Safety at Work

- Psychological Health and Safety
- The Importance of Mental Health at Work
- Managing Risk of Psychological Harm

Module-VI: Individual and Group Processes within Business

- Organisations and their Group Processes
- Observing Groups
- Changes in Modern Organisations
- Individuality
- The Big-5 or OCEAN Model
- Intent and Behaviour
- Personality Versus Behaviour
- Personality Versus Intent

Module-VII: Principles of Business Marketing

- Psychology and Social Marketing
- Influencing Human Behaviour
- Inbound Marketing

Module-VIII: Job Design and Motivational Factors

- Job Design
- Job Specialisation and Scientific Management
- Herzberg's Theory
- Job Characteristics Model (JCM)
- Empowerment

Module-IX: Human Behaviour and Positive Organisational Behaviour

- Behaviour within an Organisation
- Managing People
- Positive Organisational Behaviour (POB)
- Benefits of POB
- Beliefs and Thinking
- Introducing Business Organisation to the Hard Sciences
- Appreciative Inquiry (AI)

Suggested Readings

1. Gifts Differing: Understanding Personality Type by Isabel Briggs Myers
2. In the Grip by Naomi L. Quenk
3. FIRO: A Three-Dimensional Theory of Interpersonal Behavior by William C. Schutz
4. The Interpretation of Dreams by Sigmund Freud
5. Thinking, Fast and Slow by Daniel Kahneman

Course Outcome (CO)

CO #	Description
CO -1	Understand the importance of business psychology
CO-2	Evaluate the impact of business psychology on financial decision-making
CO-3	Develop an understanding of the role quantitative psychology with real-life applications
CO-4	Demonstrate the role of business psychology in business strategy formulation
CO-5	Understand the importance of psychology of health and safety at work
CO-6	Understand the individual and group processes within business
CO-7	Learn the implication of psychology in the context of business marketing
CO-8	Understand the concept of job design and motivational factors
CO-9	Learn human behaviour and positive organisational behaviour in

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Understand the importance of business psychology	1,2,3,4,5,6	1,2,4,5,6,7,8
CO-2	Evaluate the impact of business psychology on financial decision-making	1,3,5,6	1,3,4,5,7,8
CO-3	Develop an understanding of the role quantitative psychology with real-life applications	1,2,3,5,6	1,2,3,5,6,7,8
CO-4	Demonstrate the role of business psychology in business strategy formulation	1,2,4,5,6	1,2,4,5,6,7,8
CO-5	Understand the importance of psychology of health and safety at work	1,2,4,5,6	1,2,3,4,5,7
CO-6	Understand the individual and group processes within business	1,2,3,5,6	1,2,3,5,6,7,8
CO-7	Learn the implication of psychology in the context of business marketing	1,2,3,5	1,3,4,5,6,8
CO-8	Understand the concept of job design and motivational factors	1,2,3,5,6	1,2,3,5,6,7
CO-9	Learn human behaviour and positive organisational behaviour in	1,2,3,4,5,6	1,2,3,4,5,6,7,8

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	3	2	3	3	3	3
CO 2	3	-	3	-	3	3
CO 3	3	3	3	-	3	3
CO 4	2	3	-	3	2	2
CO 5	3	2	-	2	3	3
CO 6	3	3	3	-	3	3
CO 7	3	3	2	-	3	-
CO 8	3	3	3	-	3	3
CO 9	2	1	2	3	2	2
Average	2.78	2.50	2.71	2.75	2.78	2.75

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	3	2	-	1	3	2	2	2
CO 2	3	-	3	3	3	-	3	3
CO 3	3	3	2	-	2	1	1	3
CO 4	2	2	-	3	3	1	3	3
CO 5	2	3	2	2	2	-	2	-
CO 6	3	3	3	-	3	3	2	3
CO 7	2	-	2	2	2	3	-	2
CO 8	3	3	3	-	3	3	3	-
CO 9	3	3	3	2	1	1	1	3
Average	2.67	2.71	2.57	2.17	2.44	2.00	2.13	2.71

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Social Medicine and Community Health

Semester: 8

Subject Category: MC

Credit: 4 (L:3, T:1)

Syllabus

Module-I: Introduction to Social Medicine and Community Health

- **Overview of Social Medicine:**
 - Definition, scope, and objectives of social medicine.
 - Historical development and key milestones.
 - Importance of social medicine in healthcare management.
- **Determinants of Health**
 - Social determinants of health: socioeconomic status, education, occupation, etc.
 - Environmental determinants: physical and social environments, housing, sanitation.
 - Behavioural determinants: lifestyle choices, health behaviours, cultural influence

Module-II: Community Health Assessment and Promotion

- Community Assessment
- Methods for conducting a community health assessment.
- Identifying community health needs and resources.
- Health Promotion and Disease Prevention
- Strategies for promoting community health and preventing diseases.
- Developing and implementing health education programs.

Module-III: Healthcare Delivery Models and Health Policies

- Healthcare Systems and Models
- Comparative analysis of healthcare delivery systems.
- Primary, secondary, and tertiary healthcare services.
- Health Policy and Advocacy
- Understanding healthcare policies and their impact.
- Role of hospitals in advocating for community

Module-IV: Community Engagement and Disease

- Community Engagement and Participation
- Importance of involving communities in healthcare planning.
- Building community partnerships and collaborations.
- Healthcare Communication and Social Marketing
- Effective communication strategies for promoting health messages.
- Role of social marketing in behaviour change and health promotion.

Suggested Readings

1. "Essentials of Hospital Administration and Management" by K. Rama Mohan Rao and M.
2. "Community Medicine: A Student's Manual" by K. Park
3. "Public Health and Community Medicine: A Student's Companion" by S. P. Mukherjee
4. "Essentials of Community Medicine: A Practical Approach" by R. Prabhakara and B. Nagajothi

Course Outcome (CO)

CO #	Description
CO -1	Understand the scope, objectives, and historical development of social medicine, and recognize its significance in healthcare management.
CO-2	Analyze and evaluate the various determinants of health, including social, environmental, and behavioural factors, and their impact on community health.
CO-3	Apply community assessment methods to identify health needs and resources, and develop skills in conducting comprehensive health assessments.
CO-4	Employ effective healthcare communication strategies and social marketing techniques to promote health messages and facilitate behavior change within communities.
CO-5	Evaluate the impact of health policies on healthcare systems, and advocate for community health policies, recognizing the role of healthcare institutions in advocating for improved health outcomes.

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Understand the scope, objectives, and historical development of social medicine, and recognize its significance in healthcare management.	1, 3, 4, 5	1, 2, 6, 7, 8
CO-2	Analyze and evaluate the various determinants of health, including social, environmental, and behavioural factors, and their impact on community health.	1, 2, 3, 5	1, 2, 3, 5, 6
CO-3	Apply community assessment methods to identify health needs and resources, and develop skills in conducting comprehensive health assessments.	1, 3, 4, 5, 6	1, 5, 6, 7, 8
CO-4	Employ effective healthcare communication strategies and social marketing techniques to promote health messages and facilitate behavior change within communities	1, 2, 3, 5	1, 3, 4, 5
CO-5	Evaluate the impact of health policies on healthcare systems, and advocate for community health policies, recognizing the role of healthcare institutions in advocating for improved health outcomes.	1, 2, 3, 4, 5	1, 3, 4, 5, 7

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	3		3	3	2	
CO 2	3	3	2		2	
CO 3	3		2	3	3	2
CO 4	3	2	2		3	
CO 5	3	2	3	2	3	
Average	3	2.3	2.4	2.67	2.6	2

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	3	2				2	2	1
CO 2	3	2	2		2	2		
CO 3	3				2	2	2	1
CO 4	3		2	2	2			
CO 5	3		3	2	2		2	
Average	3	2	2.33	2	2	2	2	1

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Digital Health & Artificial Intelligence in Healthcare

Semester: 8

Subject Category: MC

Credit: 4 (L:3, T:1)

Syllabus

Module-I: Introduction to Digital Health and AI in Healthcare

- **Overview of Digital Health:**
 - Definition and scope of digital health
 - Evolution of digital health technologies
 - Importance of digital health in modern healthcare management
- **Basics of Artificial Intelligence (AI) in Healthcare:**
 - Introduction to AI and its applications in healthcare
 - Machine learning, deep learning, and natural language processing in healthcare
- **Ethical and Legal Considerations:**
 - Privacy and security concerns in digital health and AI
 - Regulatory frameworks and compliance (e.g., HIPAA, GDPR)

Module-II: Digital Health Technologies

- Telemedicine and Remote Patient Monitoring:
- Telehealth vs. telemedicine: concepts and differences
- Remote patient monitoring devices and their role in chronic disease management
- **Health Apps and Wearable Devices:**
 - Exploring health and fitness applications
 - Wearable devices for tracking health metrics
- **Internet of Things (IoT) in Healthcare:**
 - IoT-enabled medical devices and their benefits
 - Smart hospital infrastructure and patient care using IoT
 - Challenges and security considerations in IoT healthcare implementations

Module-III: AI Applications in Healthcare Management

- **Clinical Decision Support Systems (CDSS):**
 - Role of AI in clinical decision-making
 - Building and implementing CDSS for diagnosis and treatment planning
- **Predictive Analytics and Disease Outbreak Management:**
 - Using AI for disease outbreak prediction and surveillance

- Data-driven insights for resource allocation and response planning

Module-IV: Implementation and Future Trends

- **Patient Experience and Engagement:**

- Personalization of patient experiences through AI
- Chatbots, virtual assistants, and patient engagement platforms
- Designing AI-driven solutions for improved patient communication and satisfaction

- **Future Trends and Innovations:**

- Predicting the future of healthcare management with advanced technologies
- Exploring potential disruptions and opportunities in the industry

Suggested Readings

1. "Digital Health: Scaling Healthcare to the World" by Karan Singh, Dinesh Trivedi, and Kanav Kahol
2. "Artificial Intelligence in Healthcare" by Manish Kumar
3. "Digital Health: The Essential Guide" by Aniruddha Malpani and Ranjana Chandrawarkar
4. "Healthcare 4.0: How Virtualization and Big Data are Revolutionizing Medicine" by M. Bhojaraju and S. Radha Krishna

Course Outcome (CO)

CO #	Description
CO -1	Explain the fundamental concepts of artificial intelligence (AI) and its applications in healthcare, including machine learning and natural language processing.
CO-2	Analyze the ethical and legal considerations associated with digital health and AI, including privacy, security, and regulatory compliance (e.g., HIPAA, GDPR).
CO-3	Develop an understanding of Clinical Decision Support Systems (CDSS) and their implementation, including AI-driven clinical decision-making and CDSS development for diagnosis and treatment planning.
CO-4	Apply predictive analytics and AI-based approaches for disease outbreak prediction, surveillance, and resource allocation.
CO-5	Predict future trends and innovations in healthcare management facilitated by advanced technologies, and assess potential disruptions and opportunities in the industry

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Explain the fundamental concepts of artificial intelligence (AI) and its applications in healthcare, including machine learning and natural language processing	1, 2, 3, 4	1, 2, 3, 6
CO-2	Analyze the ethical and legal considerations associated with digital health and AI, including privacy, security, and regulatory compliance (e.g., HIPAA, GDPR).	1, 2, 3, 4, 6	1, 2, 3, 6, 8
CO-3	Develop an understanding of Clinical Decision Support Systems (CDSS) and their implementation, including AI-driven clinical decision-making and CDSS development for diagnosis and treatment planning.	1, 2, 3, 4, 5	1, 2, 3, 4, 6
CO-4	Apply predictive analytics and AI-based approaches for disease outbreak prediction, surveillance, and resource allocation.	1, 2, 3, 4, 5	1, 2, 3, 6, 7, 8
CO-5	Predict future trends and innovations in healthcare management facilitated by advanced technologies, and assess potential disruptions and opportunities in the industry.	1, 2, 3, 4, 5	1, 2, 3, 5, 6, 7

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	3	3	2	3		
CO 2	3	3	2	3		2
CO 3	3	2	3	3	1	
CO 4	3	3	2	3	2	
CO 5	3	2	2	3	2	
Average	3	2.6	2.2	3	1.6	2

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	2	2	3			2		
CO 2	3	3	2			2		1
CO 3	3	3	2	2		2		
CO 4	3	3	2			2	2	1
CO 5	3	3	2		2	1	2	
Average	2.8	2.8	2.2	2	2	1.8	2	1

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Geriatric Healthcare

Semester: 8

Subject Category: ME

Credit: 4 (L: 3, T: 1)

Syllabus

Module-I

- Ageing process
- Ageing theories
- Biological changes during ageing
- Psychosocial aspects of ageing

Module-II

- Personality changes
- Social changes
- Changes in family and living arrangement, Depression, Coping with psychosocial changes of aging
- Role of Old age homes and NGOs

Module-III

- Common Conditions/ diseases of elderly Fever, Anaemia, Syncope, Vertigo, Anorexia, Loss of memory, Respiratory disease, Heart disease, Kidney disease, Stroke, Metabolic disorders, Musculoskeletal disorder, CNS related health Problem, Digestive problem, Vision, Hearing, Sleep disturbances, Perimenopausal problem, Genitourinary problem, Cancer
- Nutritional Requirements of the elderly

Module-IV

- Counselling - definition, principles, dimensions, process & techniques
- Counselling the older person, Common problems requiring counselling, Counselling under special situation

Suggested Readings:

1. Principle and practice of geriatric Medicine, M. S. John Pathy, Alan J. Sinclair, John E. Morley

Course Outcome (CO)

CO#	CO
CO 01	Demonstrate an understanding of the myths and stereotypes related to older people and “ageism”; the diversity among the elderly; the importance of multidisciplinary collaboration.
CO 02	Describe the basic concepts of demography and epidemiology of aging.
CO 03	Describe the ethical issues that are aging related, advance directives, decision-making capacity, euthanasia, assisted-suicide, health-care rationing, pain management and end-of-life care.
CO 04	Effectively communicate with attending physicians and other healthcare team members in coordinating comprehensive care.
CO 05	Demonstrate effective, compassionate and empathetic communication with patients and families while considering psychosocial, economic and cultural issues of care.

CO-PO-PSO Mapping

CO#	CO	POs	PSOs
CO 01	Demonstrate an understanding of the myths and stereotypes related to older people and “ageism”; the diversity among the elderly; the importance of multidisciplinary collaboration.	1,3,5,6	1,2,3,5,6,8
CO 02	Describe the basic concepts of demography and epidemiology of aging.	1,3,5	1,2,3,5,6,8
CO 03	Describe the ethical issues that are aging related, advance directives, decision-making capacity, euthanasia, assisted-suicide, health-care rationing, pain management and end-of-life care.	1,2,3,5	1,2,3,4,6,7
CO 04	Effectively communicate with attending physicians and other healthcare team members in coordinating comprehensive care.	1,2,3,4,5,6	1,2,3,4,6,7
CO 05	Demonstrate effective, compassionate and empathetic communication with patients and families while considering psychosocial, economic and cultural issues of care.	1,2,3,4, 5,6	1,2,3,4,6,7,8

CO-PO Matrix

	PO 01	PO 02	PO 03	PO 04	PO 05	PO 06
CO 01	3	-	3	-	3	2
CO 02	3	-	3	-	2	-
CO 03	3	3	3	-	3	-
CO 04	3	3	3	2	3	3
CO 05	3	3	3	2	3	3
Average	3	3	3	2	2.8	2.67

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 01	3	2	2	-	2	2	-	1
CO 02	3	2	2	-	2	2	-	1
CO 03	3	3	2	2	-	2	2	-
CO 04	3	3	2	2	-	2	2	-
CO 05	3	3	2	2	-	2	2	1
Average	3	2.6	2	2	2	2	2	1

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: Health Insurance

Semester: 8

Subject Category: ME

Credit: 4 (L: 3, T: 1)

Syllabus

Module-I

- History of Health Insurance
- Principles of Health Insurance
- Health Insurance Products
- Health Insurance - types & importance
- Insurance vs Assurance
- Insurance as a tool for managing risk
- Current trends in Health Insurance - International and Indian scenario.

Module-II

- Public & private health insurance, Individual Mediciam policy, domiciliary hospitalization, proposal questionnaire
- Bhavishya Arogya policy, Jan Arogya Bima Policy, Pradhan Mantri Surakhsha Bima Yojna-Pradhan Mantri Jan Dhan Yojna, Swawstha Sathi. Cancer Insurance, Group Mediciam Policy

Module-III

- The Insurance Act 1938
- IRDA- 1999
- Introduction to Claims management, significance of claims settlement, nature of claims from various classes of insurance, Management of Health Insurance Claims
- Role of Third Party Administrators.

Module-IV

- Legal features of an insurance contract
- Grievance redressal mechanism-Ombudsman and CPA
- Social security scheme in India-ESI,EPF, Micro insurance scheme

Suggested Readings:

1. Mediclaim & Health Insurance by Prof Kshitij Patukale
2. Do We Care: India's Health System by K. Sujatha Rao
3. Principles of HOSPITAL Administration and Planning by B M Sakharkar

Course Outcome (CO)

CO#	CO
CO 01	Understand the concept and evolution of health insurance
CO 02	Understand the functioning of the health insurance sector and other emerging trends in the field.
CO 03	Obtain an overview of the regulatory framework in the health insurance sector.
CO 04	Understand and apply the knowledge of claim settlement in healthcare organizations.
CO 05	Understand the legalities involved in various kinds of health insurance contracts.

CO-PO-PSO Mapping

CO#	CO	POs	PSOs
CO 01	Understand the concept and evolution of health insurance	1,3,4	1,4,6,7, 8
CO 02	Understand the functioning of the health insurance sector and other emerging trends in the field.	1,3,4,6	1,3,6,7,8
CO 03	Obtain an overview of the regulatory framework in the health insurance sector.	1,2,3,4,5	1,2,3,4,5,6,7,8
CO 04	Understand and apply the knowledge of claim settlement in healthcare organizations.	1,2,3,4,5,6	1,2,3,4,5,6,7,8
CO 05	Understand the legalities involved in various kinds of health insurance contracts.	1,2,3,4,5	1,2,3,4,5,6,7,8

CO-PO Matrix

	PO 01	PO 02	PO 03	PO 04	PO 05	PO 06
CO 01	3	-	2	3	-	-
CO 02	3	-	2	3	-	2
CO 03	3	2	2	3	2	-
CO 04	3	2	2	3	2	2
CO 05	3	2	2	3	2	-
Average	3	2	2	3	2	2

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

CO-PSO Matrix

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 01	3	-	-	3	-	2	2	1
CO 02	3	-	3	-	-	2	2	1
CO 03	3	2	3	2	2	2	2	1
CO 04	3	2	3	2	2	2	2	1
CO 05	3	2	3	2	2	2	2	1
Average	3	2	3	1.8	2	2	2	1

1: (Slightly Low)

2: Moderate (Medium)

3: Substantial (High)

-: None

Subject: Hospital Materials Management

Semester: 8

Subject Category: ME

Credit: 4 (L: 3, T: 1)

Syllabus

Module-I: Introduction

- Definition, scope and importance of materials management
- Aims, objectives & principles of materials management
- Material Cycle
- Material Codification-advantages and types.

Module-II: Stores Management

- Responsibilities and functioning of stores,
- Types of Medical Stores,
- Planning of hospital stores, duties of officer in-charge and storekeeper; location, lay-out planning and design of hospital stores, preservation of stores,
- Documentation & evaluation of stores and role of computers in hospital stores management.

Module-III: Purchase Management

- Objectives and elements of good purchasing system
- Procurement procedure, Tender system, modes of tenders
- Purchase order and its types, types of purchasing systems

Module-IV: Inventory Management

- Types of inventory, objectives and scope of inventory control
- Lead time, Buffer stock, Re-order level, Economic order quantity (EOQ)
- Inventory control costs – Purchase cost, shortage cost, inventory carrying cost & inventory acquisition cost
- Inventory ordering systems
- Inventory control Techniques- ABC, VED, SDE, SAP, FSN, HML, XYZ, SOS, GOLF, MUSIC

Suggested Readings:

1. Hospital Stores Management- An Integrated Approach, by Dr. Gupta Shakti, Jaypee Brothers.
2. Material Management by Dr. Pawan Arora, Global India Publication Pvt Ltd
3. Handbook of Materials Management, P. Gopalkrishnan, Eastern Economy Edition

Course Outcomes CO

CO#	CO
CO 01	Acquire skills in appropriate methods for the procurement, storage, distribution of various categories of materials in the hospital
CO 02	Ensure optimal utilization of all materials in the hospital with minimum wastage.
CO 03	Ensure patient satisfaction through the supply of right materials at the right place, and at the right time.
CO 04	Apply knowledge in classifying various categories of materials in the hospital and determine what quantity is to be stocked
CO 05	Apply proper inventory management techniques in order to avoid over- stocking or stock outs.

CO-PO-PSO Mapping

CO#	CO	POs	PSOs
CO 01	Acquire skills in appropriate methods for the procurement, storage, distribution of various categories of materials in the hospital	1,2,3 5	1,3,6,8
CO 02	Ensure optimal utilization of all materials in the hospital with minimum wastage.	1,2,3,4,5	1,3,6,8
CO 03	Ensure patient satisfaction through the supply of right materials at the right place, and at the right time.	1,2,3,4,5,6	1,2,3,4,5
CO 04	Apply knowledge in classifying various categories of materials in the hospital and determine what quantity is to be stocked	1,2,3,4,5	1,3,6,7,8
CO 05	Apply proper inventory management techniques in order to avoid over- stocking or stock outs	1,2,3,5	1,2,3,4, 5,7,8

PO-CO Matrix

	PO 01	PO 02	PO 03	PO 04	PO 05	PO 06
CO 01	3	3	2	-	2	-
CO 02	3	3	2	3	2	-
CO 03	3	3	2	3	2	3
CO 04	3	3	2	3	2	-
CO 05	3	3	2	-	2	-
Average	3	3	2	3	2	3

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 01	3	-	3	-	-	2	-	2
CO 02	3	-	3	-	-	2	-	2
CO 03	3	3	3	2	2	-	-	-
CO 04	3	-	3	-	-	2	2	2
CO 05	3	3	2	2	2	-	2	2
Average	3	3	2.8	2	2	2	2	2

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

Subject: International Health System

Semester: 8

Subject Category: ME

Credit: 4 (L:3, T:1)

Syllabus

Module-I

- Introduction to international health and its importance
- Historical perspectives on global health
- Key global health indicators and metrics

Module-II

- International organizations and their roles (WHO, UNICEF, etc.)
- Global health policies and treaties
- Challenges in global health governance

Module-III

- The role of pharmaceutical companies in global health
- Challenges in access to affordable and essential medicines
- The concept of UHC and its importance
- Strategies for achieving UHC in different global contexts

Module-IV

- Public-private partnerships in global health
- Ethical dilemmas in international health research and practice
- Cultural competence and sensitivity in global health work

Suggested Readings

1. International Public Health: Diseases, Programs, Systems, and Policies" by Michael H. Merson, Robert E. Black, and Anne J. Mills
2. Global Health: An Introduction to Current and Future Trends" by Kevin McCracken and David R. Barile
3. Introduction to Global Health" by Kathryn H. Jacobsen

Course Outcome (CO)

CO #	Description
CO -1	Demonstrate a deep understanding of global health systems, including their structures, policies, and challenges.
CO-2	Apply ethical principles and governance standards to the international health context.
CO-3	Analyze and solve complex global health problems and challenges, including those related to healthcare delivery.
CO-4	Develop strategies for continuous improvement in international health processes and services.
CO-5	Demonstrate strong interpersonal and communication skills, enabling effective teamwork and collaboration to address diverse global health needs.

CO-PO-PSO Mapping

CO #	Course Outcomes (CO)	POs	PSOs
CO -1	Demonstrate a deep understanding of global health systems, including their structures, policies, and challenges.	1,2,3,4	1,2,3,6
CO-2	Apply ethical principles and governance standards to the international health context	1,2,3,4,6	1,2,3,6,8
CO-3	Analyze and solve complex global health problems and challenges, including those related to healthcare delivery.	1,2,3,4,5	1,2,3,4,6
CO-4	Develop strategies for continuous improvement in international health processes and services.	1,2,3,4,5	1,2,3,6,7,8
CO-5	Demonstrate strong interpersonal and communication skills, enabling effective teamwork and collaboration to address diverse global health needs	1,2,3,4,5	1,2,3,5,,6,7

CO-PO Matrix

Course Outcome	Programme Outcome					
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO 1	3	3	2	3		
CO 2	3	3	2	3		2
CO 3	3	2	3	3	1	
CO 4	3	3	2	3	2	
CO 5	3	2	2	3	2	
Average	3	2.6	2.2	3	1.6	2

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None

CO-PSO Matrix

Course Outcome	Programme Specific Outcome							
	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CO 1	2	2	3			2		
CO 2	3	3	2			2		1
CO 3	3	3	2	2		2		
CO 4	3	3	2			2	2	1
CO 5	3	3	2		2	1	2	
Average	2.8	2.8	2.2	2	2	1.8	2	1

1: (Slightly Low) 2: Moderate (Medium) 3: Substantial (High) -: None