National Curriculum and Credit Framework (NCCF)
Syllabus
for
Bachelor of Business Administration (Hospital Management)
w.e.f. Academic Session 2023-24

Kazi Nazrul University
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Content

PREAMBLE

The objective of the Bachelor of Business Administration in Hospital Management (BBAHM) programme is to prepare students for the rapidly evolving healthcare ecosystem by integrating management principles with healthcare delivery systems.

The programme follows the **National Credit Framework (NCCF)** and adopts an **Outcome-Based Education (OBE)** approach to ensure student-centric, skill-oriented, and industry-relevant learning.

Healthcare is transitioning from a provider-centric to a patient-centric and value-based system, requiring professionals with competencies in hospital operations, patient care management, digital health, and healthcare analytics.

This programme aims to:

- Develop competent healthcare managers
- Promote ethical, patient-centered decision-making
- Integrate technology, research, and innovation in healthcare management
- Enhance employability, entrepreneurship, and lifelong learning

The curriculum blends theoretical knowledge, practical exposure, hospital training, and research orientation, preparing graduates for roles in hospitals, healthcare startups, consulting, insurance, and public health systems.

1. INTRODUCTION TO BBA (HOSPITAL MANAGEMENT) PROGRAMME

The Bachelor of Business Administration in Hospital Management (BBAHM) is a specialized undergraduate programme designed to develop competent professionals capable of managing the complex and dynamic healthcare delivery system. The programme integrates core management principles with domain-specific knowledge of hospital administration, patient care systems, healthcare policies, and digital health technologies.

The healthcare industry has undergone a significant transformation in recent years, shifting from a **volume-based, provider-centric model to a value-based, patient-centric ecosystem**. This transition has created a growing demand for skilled healthcare managers who can ensure operational efficiency, quality care delivery, patient satisfaction, and regulatory compliance.

The BBAHM programme is structured to address these evolving industry needs by providing students with:

- A strong foundation in management disciplines such as finance, marketing, human resource management, and operations
- Domain expertise in hospital operations, patient care management, healthcare quality, and accreditation systems (e.g., NABH)
- Exposure to healthcare analytics, research methodology, and decision-making models
- Understanding of healthcare laws, ethics, and socio-economic dimensions of healthcare delivery

The programme adopts a **multidisciplinary and application-oriented approach**, combining classroom learning with practical exposure through:

- Hospital visits and fieldwork
- Internships and live projects
- Case-based learning and simulations
- Research and analytical assignments

Special emphasis is given to developing patient-centric thinking, ethical decision-making, and effective communication skills, which are essential for managing diverse stakeholders such as patients, caregivers, medical professionals, insurers, and regulatory bodies.

In alignment with the **National Education Policy (NEP 2020)** and the **National Credit Framework (NCCF)**, the programme offers flexibility, interdisciplinary learning, and multiple exit options. It also encourages innovation, entrepreneurship, and lifelong learning.

Upon completion, graduates will be equipped to take up roles in:

- Hospitals and healthcare organizations
- Health insurance companies
- Healthcare consulting firms
- Public health agencies and NGOs
- Healthcare startups and digital health platforms

Thus, the BBAHM programme aims to create industry-ready, ethically responsible, and analytically competent healthcare managers who can contribute effectively to the improvement of healthcare systems at local, national, and global levels.

2. OUTCOME-BASED CURRICULUM NATIONAL CREDIT FRAMEWORK (NCCF)

The BBAHM programme is structured under the **National Credit Framework (NCCF)**. This framework ensures that the curriculum is **student-centric, outcome-driven, flexible, and skill-oriented**, enabling learners to achieve clearly defined competencies at each stage of the programme.

The framework integrates multiple types of courses, each serving a distinct academic and professional purpose.

2.1 Major Courses (Discipline Core – Hospital Management)

Definition:

Major Courses are the **core subjects of the discipline**, which provide in-depth knowledge of hospital and healthcare management.

Components:

- Hospital Operations
- Patient Care Management
- Healthcare Marketing
- Healthcare Finance
- Quality & Accreditation
- Medical Terminology

Importance:

- Builds domain expertise in healthcare systems
- Develops decision-making ability in hospital environments
- Prepares students for core healthcare management roles

2.2 Minor Courses (Supporting Discipline)

Definition:

Minor courses are taken from **related disciplines** such as general management, statistics, or public health.

Examples:

- Principles of Management
- Organizational Behaviour
- Bio-Statistics
- Business Economics

Importance:

- Strengthens interdisciplinary understanding
- Enhances analytical and managerial skills
- Supports holistic learning beyond the healthcare domain

2.3 Multidisciplinary Courses (MDC)

Definition:

Courses that allow students to explore **subjects outside their core discipline**, promoting cross-disciplinary learning.

Examples:

- Psychology
- Sociology
- Public Policy
- Environmental Studies

Importance:

- Encourages broad-based education (NEP focus)
- Develops critical thinking and social awareness
- Helps understand healthcare in a socio-economic context

2.4 Skill Enhancement Courses (SEC)

Definition:

Courses are designed to develop **practical and employability-oriented skills**.

Examples:

- Computer Applications & AI in Healthcare
- Data Analysis using Excel/SPSS
- Communication Skills
- Digital Tools in Healthcare

Importance:

- Enhances technical and digital competencies

- Improves job readiness
- Bridges the industry–academia gap

2.5 Ability Enhancement Courses (AEC)

Definition:

Courses aimed at improving **language, communication, and environmental awareness**.

Examples:

- English Communication
- Environmental Studies

Importance:

- Builds professional communication skills
- Develops ethical and environmental consciousness
- Essential for patient interaction and reporting

2.6 Value Added Courses (VAC)

Definition:

Short-duration courses that provide **additional knowledge beyond the core curriculum**.

Examples:

- Hospital Accreditation (NABH) basics
- Medical Coding (ICD, DRG)
- Soft skills and personality development

Importance:

- Adds specialized competencies
- Improves employability and certification readiness
- Provides industry-specific exposure

2.7 Internship / Field Work

Definition:

Structured practical training in hospitals or healthcare organizations.

Importance:

- Provides real-world exposure
- Helps apply theoretical concepts in practice
- Develops professional behavior and problem-solving skills

2.8 Research Project / Dissertation

Definition:

A supervised research work in healthcare management.

Importance:

- Develops research and analytical capability

- Encourages evidence-based decision making
- Prepares students for:
    - Higher studies
    - Publications
    - Consulting roles

3. PROGRAMME OBJECTIVE:

The Bachelor of Business Administration in Hospital Management (BBAHM) programme is designed with the following objectives:

PEO1: Development of Healthcare Management Competence:

To equip students with comprehensive knowledge of hospital administration, healthcare systems, and management principles, enabling them to effectively manage healthcare organizations in a dynamic environment.

PEO2: Patient-Centric and Ethical Orientation:

To inculcate a patient-centered approach, emphasizing empathy, ethics, and professionalism in healthcare delivery, ensuring quality care and respect for patient rights.

PEO3: Analytical and Data driven Dicision Making:

To develop students' ability **to** analyze healthcare data, interpret clinical and operational indicators, and apply quantitative and qualitative techniques for informed decision-making.

PEO4: Integration of Technology and Digital Health:

To provide knowledge and skills related to health information systems (HIS), electronic health records (EHR), artificial intelligence (AI), and digital healthcare platforms**,** enhancing operational efficiency and innovation.

PEO5: Quality, Safety, and Regulatory Compliance:

To enable students to understand and implement healthcare quality standards, patient safety protocols, and accreditation frameworks (e.g., NABH)**,** ensuring compliance with legal and regulatory requirements.

PEO6: Leadership, Teamwork, and Communication Skills:

To develop leadership capabilities, teamwork, and effective communication skills required for managing multidisciplinary healthcare teams and diverse stakeholders.

PEO7: Entrepreneurship and Innovation in Healthcare:

To cultivate entrepreneurial thinking and innovation, encourage students to identify opportunities and develop solutions in healthcare services, startups, and health-tech domains.

PEO8: Research and Evidence-based Practice:
To build competence in research methodology, data analysis, and evidence-based management practices**,** enabling students to contribute to healthcare research and policy development.

PEO9: Socio-Economic and Public Health Awareness:
To sensitize students towards public health challenges, healthcare accessibility, equity, and socio-economic determinants of health, particularly in the Indian context.

PEO10: Lifelong Learning and Professional Development:
To cultivate a mindset of continuous learning, adaptability, and professional growth**,** preparing students to meet evolving challenges in the healthcare industry.

4. GRADUATE ATTRIBUTES:

1. Disciplinary Knowledge: Graduates will possess a strong foundation in management principles and healthcare systems**,** including hospital operations, patient care management, healthcare finance, and quality systems.

2. Critical Thinking and Problem Solving: Ability to analyze complex healthcare problems, evaluate alternatives, and propose practical and innovative solutions using structured reasoning and evidence-based approaches.

3. Analytical and Data Interpretation Skill: Competence in handling healthcare data, interpreting performance indicators (e.g., LOS, readmission, quality KPIs), and using analytical tools for decision-making.

4. Patient-Centric and Ethical Orientation: Strong commitment to patient welfare, ethical practices, confidentiality, and respect for diversity, ensuring humane and responsible healthcare management.

5. Communication and Interpersonal Skill: Ability to communicate effectively with:

- Patients and caregivers
- Doctors and clinical staff
- Administrators and stakeholders

with clarity, empathy, and professionalism.

6. Leadership and Teamwork: Capability to lead multidisciplinary healthcare teams, manage conflicts, and foster collaboration in high-pressure environments such as hospitals.

7. Digital & Technological Competence: Proficiency in:

- Hospital Information Systems (HIS)
- Electronic Health Records (EHR)
- Data analytics tools
- Emerging technologies like AI and IoT in healthcare

8. Research and Innovation Skill: Ability to:

- Conduct research studies
- Analyze healthcare problems
- Develop innovative solutions

and contribute to evidence-based healthcare management.

9. Social Responsibility and Public Health Sensitivity: Awareness of:

- Healthcare accessibility and equity
- Public health issues
- Community health needs

and commitment to improving healthcare delivery in society.

10. Professionalism and Ethical Responsibility: Adherence to:

- Ethical standards
- Legal frameworks
- Professional conduct

in all aspects of healthcare management.

11. Adaptability and lifelong learning: Ability to:

- Adapt to changing healthcare environments
- Continuously update knowledge and skills
- Engage in lifelong learning

12. Entrepreneurial Mindset: Capacity to:

- Identify opportunities in healthcare
- Develop innovative business models
- Contribute to healthcare startups and consulting

5. PROGRAMME OUTCOME:

PO1: Application of Hospital Management Principles: Graduates will demonstrate the ability to apply hospital and healthcare management concepts to efficiently handle operational, administrative, and service-related functions in healthcare institutions.

PO2: Critical and Creative Thinking: Graduates will be equipped to critically analyze healthcare challenges and devise innovative, practical solutions to complex hospital management scenarios.

PO3: Interdisciplinary Integration: Graduates will be capable of integrating knowledge from healthcare, management, technology, and behavioral sciences to develop a comprehensive understanding of hospital systems.

PO4: Data Interpretation and Decision-Making: Graduates will possess the skills to collect, analyze, and interpret data to support evidence-based decisions and performance improvements within healthcare organizations.

PO5: Digital Literacy and ICT Proficiency: Graduates will demonstrate competence in using digital tools, hospital information systems (HIS), and modern ICT platforms for effective information management and healthcare service delivery.

PO6: Leadership and Teamwork Abilities: Graduates will exhibit leadership potential and the ability to function effectively within multidisciplinary teams, promoting collaboration in healthcare environments.

PO7: Effective Communication Skills: Graduates will be able to communicate ideas, policies, and technical information clearly and appropriately to diverse stakeholders, including patients, healthcare professionals, and administrators.

PO8: Ethical and Professional Conduct: Graduates will uphold ethical principles, legal standards, and values in managing hospital operations, ensuring fairness, transparency, and accountability in healthcare delivery.

PO9: Social and Community Responsibility: Graduates will recognize the societal impact of healthcare and demonstrate a commitment to inclusivity, accessibility, and community well-being through active engagement and service.

PO10: Global Perspective and Sustainable Practices: Graduates will understand global health trends and sustainability challenges, contributing to environmentally responsible and resilient hospital systems.

6. PROGRAMME SPECIFIC OUTCOMES:

PSO	Description
PSO1	Manage hospital operations and healthcare delivery systems
PSO2	Apply patient care management and quality frameworks.
PSO3	Use healthcare analytics, HIS, and digital tools.
PSO4	Design healthcare marketing and patient relationship strategies.
PSO5	Apply healthcare finance, costing, and insurance systems.

7. Structure of Bachelor of Business Administration in Hospital Management under Faculty of Commerce and Management, Kazi Nazrul University, Asansol:

7.1 Credit distribution of BBA (HM)

Course Types	**Number of Courses**	**Credits (Theory + Practical)**	**Total Credits**
MAJOR Courses	4 Year Degree Honours: **21** 4 Year Degree Honours with Research: **18**	**18 Courses- 5 Credit** and **3 Courses- 4 Credit**	4 Year Degree Honours**:102** 4 Year Degree Honours with Research**: 90**
MINOR Courses	4 Years Degree Honours/ Degree Honours with Research: **7**	**5 Credits**	**35**
MD Courses (Multidisciplinary**)**	4 Years Degree Honours/ Degree Honours with Research: **3**	**3 Credits**	**9**
AE (Ability Enhancement**)**	4 Years Degree Honours/ Degree Honours with Research: **2**	**4 Credits**	**8**

SE (Skill Enhancement)	4 Years Degree Honours/ Degree Honours with Research: **3**	**3 Credits**	**9**
VA (Value Added)	4 Years Degree Honours/ Degree Honours with Research 2	**4 Credits**	**8**
SI (Summer Internship**)**	4 Years Degree Honours/ Degree Honours with Research: 1	**2 Credits**	**2**
RP (Research Project**)**	Degree Honours with Research: 2	**4 and 8 Credits Respectively**	**12 (Only Degree Honours with Research**)
Total Credits	**173**		

7.2 Semester-wise Distribution of Course:

BBA (Hospital Management) consists of 8 Semesters, 4 years Degree Honours/ Honours with Research, with a total of 173 credits. It has 21 Major Courses for 4 years Degree Honours and 18 Major courses for 4 years Degree Honours with Research, 7 Minor courses, 3 MD (Multidisciplinary) courses, 2 AE (Ability Enhancement) courses, 3 SE (Skill Enhancement) courses, 2 VA (Value-Added) courses, 1 SI (Summer Internship) course. For a 4 Year Degree Honours with Research, 2 RP (Research Project) courses. All Major, Minor, and Research Project courses are 100 marks. The dissertation is 200 marks. All the MD, VA, AE, and SI are 50 marks each. L stands for Lecture hour, T stands for Tutorial hour, and P stands for Practical hour/ Field work.

Semester I

Course Title	Course Type	Course Details	(L-T-P)	Credit	Marks
Hospital Operation Management-I	MAJOR	MJC-1	4-1-0	5	100
Principles of Management & Organizational Behaviour	MINOR	MNC-1	4-1-0	5	100
Choose from the Pool of Multidisciplinary Courses offered in 1st Semester across the faculties.	MD	MDC-1	2-1-0	3	50
English/ MIL Communication	AE	AEC-1	4-0-0	4	50
Computer Fundamentals, IoT, and AI	SE	SEC-1	2-1-0	3	50
TOTAL				20	350

Semester II

Course Title	Course Type	Course Details	(L-T-P)	Credit	Marks
Medical Terminology	MAJOR	MJC-2	4-1-0	5	100
Bio-Statistics	MINOR	MNC-2	4-1-0	5	100
Choose from the Pool of Multidisciplinary Courses offered in 1st Semester across the faculties.	MD	MDC-2	2-1-0	3	50
Environmental Studies	VA	VAC-1	4-0-0	4	50
Diagnostic Techniques in Healthcare	SE	SEC-2	3-0-0	3	50
TOTAL				20	350

Semester III

Course Title	Course Type	Course Details	(L-T-P)	Credit	Marks
Hospital Operation Management-II	MAJOR	MJC-3	4-1-0	5	100
Community Health, Epidemiology, and Hospitals	MAJOR	MJC-4	4-1-0	5	100
Business Environment	MINOR	MNC-3	4-1-0	5	100
Choose from the Pool of Multidisciplinary Courses offered in 1st Semester across the faculties.	MD	MDC-3	2-1-0	3	50
English Communication	AE	AEC-2	4-0-0	4	50
TOTAL				22	400

Semester IV

Course Title	Course Type	Course Details	(L-T-P)	Credit	Marks
Hospital Operation Management-III	MAJOR	MJC-5	4-1-0	5	100
Accounts and Financial Management in Hospitals	MAJOR	MJC-6	4-1-0	5	100
Hospital Information System	MINOR	MNC-4	4-1-0	5	100
Data Analysis using Python	SE	SEC-3	2-1-0	3	50
Choose from the pool of Value Added Courses offered in the 4th Semester	VA	VAC-2	4-0-0	4	50
TOTAL				22	400

Semester V

Course Title	Course Type	Course Details	(L-T-P)	Credit	Marks
Quality Management in Hospitals	MAJOR	MJC-7	4-1-0	5	100
MRD, TPA, and Risk Management	MAJOR	MJC-8	4-1-0	5	100
Healthcare Analytics and Informatics	MAJOR	MJC-9	4-1-0	5	100
Health Economics	MINOR	MNC-5	4-1-0	5	100
TOTAL				20	400

Semester VI

Course Title	Course Type	Course Details	(L-T-P)	Credit	Marks
Project Work and Viva	MAJOR	MJC-10	0-0-10	5	100
Marketing Management & Human Resource Management	MAJOR	MJC-11	4-1-0	5	100
Clinical and Business Law	MAJOR	MJC-12	4-1-0	5	100
Inventory Control, Purchase, & Store Management in Hospitals	MAJOR	MJC-13	4-1-0	5	100
Summer Internship	SI	SIMC-1	0-0-4	2	50
TOTAL				22	450

* Students who want to undertake a 3-year UG programme will be awarded UG-Degree in the relevant Discipline/ Subject upon securing 126 Credits.

4 Year UG-Degree (Honours):-

Semester VII

Course Title	Course Type	Course Details	(L-T-P)	Credit	Marks
Medical Tourism and Digital Healthcare Marketing	MAJOR	MJC-14	4-1-0	5	100
Medical Ethics and Psychology in Patient Care	MAJOR	MJC-15	4-1-0	5	100
Service Marketing in Healthcare	MAJOR	MJC-16	4-1-0	5	100
Research Methodology in Healthcare	MAJOR	MJC-17	4-1-0	5	100
Strategic Management in Health Care	MINOR	MNC-6	4-1-0	5	100
TOTAL				25	500

Semester VIII

Course Title	Course Type	Course Details	(L-T-P)	Credit	Marks
Drugs Policy and Management in Hospitals	MAJOR	MJC-18	4-1-0	5	100
Occupational Health and Ergonomics	MAJOR	MJC-19	3-1-0	4	100
Entrepreneurship and Consultancy Management	MAJOR	MJC-20	3-1-0	4	100
Customer Relationships in Healthcare	MAJOR	MJC-21	3-1-0	4	100
Patient Care Management System	MINOR	MNC-7	4-1-0	5	100
TOTAL				22	500
GRAND TOTAL				**173**	**3350**

4 Year UG-Degree (Honours with Research):-

Semester VII

Course Title	Course Type	Course Details	(L-T-P)	Credit	Marks
Medical Tourism and Digital Healthcare Marketing	MAJOR	MJC-14	4-1-0	5	100
Medical Ethics and Psychology in Patient Care	MAJOR	MJC-15	4-1-0	5	100
Service Marketing in Healthcare	MAJOR	MJC-16	4-1-0	5	100
Research Methodology in Healthcare	MAJOR	MJC-17	4-1-0	5	100
Strategic Management in Health Care	MINOR	MNC-6	4-1-0	5	100
TOTAL				25	500

Semester VIII

Course Title	Course Type	Course Details	(L-T-P)	Credit	Marks
Drugs Policy and Management in Hospitals	MAJOR	MJC-18	4-1-0	5	100
Research Methodology	RP	RPC-1	4-0-0	4	100
Research Project/ Dissertation	RP	RPC-2	0-0-16	8	200
Patient Care Management System	MINOR	MNC-7	4-1-0	5	100
TOTAL				22	500
GRAND TOTAL				**173**	**3350**

SEMESTER- I

MAJOR COURSE-1

Course Name: Hospital Operation Management-I
Course Code: BBAHMMJ101

Course Type: MAJOR	Course Details: MJC-1			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	30	0	70

Course Objective: This subject focuses on the basic operational procedures, organizational structure, regular issues, and related strategies to solve problems for a hospital organization in the modern world. Students will learn and embed the skills required for managing a modern hospital with multiple beds and services.

Learning Outcome:

After completion of the course, learners can
1. Define hospital; relate the hospital as an organization in different social structures.
2. Learn hospital organization, hierarchy, and relationship matrix as a complex organization.
3. Understand hospital day-to-day operational issues, managerial issues, and leadership functions in various departments, including value addition to the community.
4. Evaluate the hospital organization through internal and external environmental analysis and effective use of strategies at different levels of the hospital organization.
5. Overall ability to discuss and critically evaluate the mission, vision, and goal statements of any organization.

Unit 1:Concept and Definition of Health, Dimensions of health, Concept of Well-being- Quality of health, Spectrum of health, Determinants of Health, Right to health and responsibility for health, Indicators of health- mortality, morbidity, disability, nutritional status, healthcare delivery, utilization rate, social and mental health, environmental, socio-economic, health policy, quality of life indicators; Primary healthcare and declaration of Alma Ata, Health for all.

Unit 2: Hospital: Definition, the role of the hospital in healthcare, hospital as a system, as a social system; Types of hospitals; History of hospitals, history of hospitals in India; Hospital and community relationship. Primary, Secondary, Tertiary, and Quaternary healthcare services. Definition of Health and Concept of Health.

Unit 3: Hospital as an organization- overview, managerial hierarchy, different organizational structure of hospitals; role of a hospital manager in different managerial levels; Governing body

and different hospital committees; Concept and issues in the management of hospitals in India; different organizational issues in hospitals; Value chain system.

Unit 4: Strategic management- definition, the process of strategic management, Strategic intent- Mission, Vision, Goal, Philosophy; Environmental analysis: SWOT analysis, PESTEL Analysis, Porter's 5 forces model.

Unit 5: Level of strategies: Corporate level- Portfolio Analysis, BCG, GE-McKinsey; Strategic Business Units- Generic business strategies, Functional level.
Strategic evaluation- Balance scorecard, Benchmarking.

Suggested Readings:

1. Principles of Hospital Administration and Planning- BM Sakharkar, JAYPEE, 2nd Edition.
2. Managing a Modern Hospital- Edited by A.V. Srinivasan, Response SAGE Publication, 2nd Edition.
3. Hospital Administration- DC Joshi and Mamta Joshi, JAYPEE
4. Hospital Management- Text and Cases- K.V. Ramani- PEARSON
5. Strategic Management- An Integrated Approach- Charles W. L. Hill and Gareth R. Jones, CENGAGE Learning, 9th Edition.
6. Strategic Management: The Indian Context- R. Srinivasan, Prentice Hall India Learning Private Limited.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or in combinations of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.

External Examination (70 Marks): End Semester Written Examination, duration 4 hours.

MINOR COURSE - 1

Course Name: Principles Of Management &Organizational Behaviour
Course Code: BBAHMMN101

Course Type: MINOR	Course Details: MNC-1			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	30	0	70

Course Objective:

The objective of the "Principles of Management & Organizational Behaviour" course is to provide students with a foundational understanding of management principles and the dynamics of organizational behavior. The course aims to equip students with essential knowledge, skills, and insights to effectively manage people, resources, and processes in various organizational settings.

Learning Outcome:

After completing the course, the student shall be able to:

1. Understand the evolution of management and comprehend its effect on future managers.
2. Analyze how organizations adapt to an uncertain environment and decipher the decision-making techniques managers use to influence and control the internal environment.
3. Comprehend the changes happening in organizational structure over time.
4. Analyzetherelationshipamongstfunctionsofmanagementi.e.planning, organizing, directing, and controlling.
5. Appreciate the changing dynamics of management practice.
6. Develop an understanding of different approaches to designing organizational structures.
7. Understand the role of personality, learning, and emotions at work.
8. Discover and understand the concept of motivation, leadership, power, and conflict.
9. Understand the foundations of group behavior and the framework for organizational change and development.

Unit 1: Nature, Scope and Process of Management: Concept of Management, Role and Importance of Management, Functions and Levels of Management, Management – A Science and an Art; Evolution of Management Thought: Early Contributors to Management Thoughts; Scientific Management, Administrative Theory of Management.

Unit 2: Planning and Organizing: Features of Planning, Importance, Steps, Types. Decision-making; Formal and Informal Organizations, Organization Structure: Line and staff, Delegation

of Authority, Centralization and decentralization, Departmentalization: Concept and Types, Span of Management.

Unit 3: Leadership, Coordination and Control: Leadership, Functions and Importance, Qualities of a Good Leader, Leadership Styles. Concept and features of Coordination, Nature of Control, Relationship between Planning and Control, Elements of Control System.

Unit 4: Introduction to Organisational Behaviour: Concept, Learning objectives, Challenges and Opportunities of Organisational Behaviour (OB), Issues in Developing an OB Model; Characteristics of Human Behaviour.

Unit 5: Personality, Perception, Motivation & Group Dynamics: Personality: Concept and Types, Major Determinants. MBTI, Type-A and Type- B Theory; Perception: Concept, Factors influencing Perception; Learning: Concept; Attitude: Concept, Different Job Attitudes; Motivation: Concept, Basic Theories of Motivation (Maslow, Herzberg, McClelland and McGregor); Group Dynamics: Concept of group, Stages of Group Development, Types of Groups, Work Teams Vs. Work Groups, Group Synergy.

Suggested Readings:

1. Management: Theory and Practice- C.B. Gupta, Sultan Chand and Sons Educational Publishers.
2. Principles and Practice of Management- Dr. L.M. Prasad, Sultan Chand and Sons Educational Publishers, 6th Edition.
3. Principles of Hospital Administration and Planning- BM Sakharkar, JAYPEE, 2nd Edition.
4. Management Case Studies: A Student's Handbook- R.K. Yaraddi, Dr. R. R Kulkarni, Dr. S.R.Patil, R.R Navalagi, Notion Press, 1st Edition.
5. EssentialsofManagement: Weihrich and Koontz, et al, Tata-McGraw-Hill.
6. Management: Stoner Jand Freeman RE, Prentice-Hall.
7. Management: Daft, RL, Thomson.
8. Organizational Behaviour- Stephen P. Robbins, Timothy A. Judge, Neharika Vohra, Pearson, 18th Edition
9. Managing Organizational Behaviour- Dr. V.S.P Rao, V. Sudeepa, Laxmi Publication Pvt Ltd, 3rd Edition.
10. Management of Organizational Behavior–Harsey, Paul & Kenneth H. Blancher; PHI.
11. Organizational Behaviour: Human Behaviour at Work - Davis and Newstrom, Tata McGraw-Hill.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or in combinations of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.

External Examination (70 Marks): End Semester Written Examination, duration 4 hours.

MULTIDISCIPLINARY COURSE – 1

Course Name: E-Commerce
Course Code: MDC102

Course Type: Multidisciplinary	Course Details: MDC-1			L-T-P: 3-0-0	
Credit: 3	Full Marks: 50	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	15	0	35

CourseObjectives

The purpose of this course is to provide an introduction to e-commerce for business and management. It will also help to understand the complexity of e-commerce and its many facets. Students will learn how e-business and e-commerce fit together. Also, they will be able to identify the impact of e-commerce and recognize the benefits and limitations of e-commerce.

LearningOutcomes

After completing the course, the student shall be able to:

1. Identify the parts of e-commerce.
2. Identify the benefits of selling online.
3. Know how to optimise and stay safe when selling online.
4. Understand the risks around Cyber Security when trading and doing business online.
5. Understand the basic concepts and technologies used in the field of management information systems.
6. Understands the processes of developing and implementing information systems.
7. Beawareoftheethical, social, and security issues of information systems.

Unit-I: Introduction: E-Commerce-meaning, nature, concepts, types; e-commerce business models B2B [concept, major activities, types of B to B market (independent, buyer oriented, supplier oriented, e-market place)], B2C[portals, e-tailer, content provider, transaction broker, real life examples of B2C], C2C, C2B, etc.; forces behind e-commerce, e-Governance[meaning, types, significance,reallife examples].

Unit-II: E-CRM and SCM: E-CRM-definition, features, goals of E-CRM business framework, phases of E-CRM, types of E-CRM, Functional components of E-CRM, strategies for E-CRM solutions; SCM definition, features, types of supply chain.

Unit-III: Digital Payment: Methods of e-payments [Debit Card, Credit Card, Smart Cards, e-Money], electronic or digital wallet, digital signature (procedures, working and legal provisions), payment gateways [Core Banking Solution or CBS, Mobile Payment, UPI, NCPI, International Payments], Online banking [meaning, concepts, importance, electronic fund transfer, automated clearing house, automated ledger posting], risks involved in e-payments.

Unit-IV: ERP: Definition, features, major characteristics, levels of ERP, benefits of ERP, enterprise potential of ERP, modules of ERP, phases of ERP implementation, limitations of ERP.

Unit-V: New Trends in E-Commerce: Social Commerce-concept, definition, features; Digital Marketing-definition, objectives, methods, limitations; Advertisement in social media-objectives, advantages and disadvantages, procedures.

Suggested Readings:

1. P.T.Joseph, E-Commerce: An Indian Perspective, PHILearning
2. Henry Chan, Raymond Lee, Tharam Dillon, Elizabeth Chang, E-Commerce: Fundamentals and Applications, Wiley.
3. Laudon, E-Commerce, Pearson Education India
4. SchneiderG., E-Business, Cengage
5. Bhaskar, B., E–Commerce, McGraw-Hill

TeachingLearningProcess

Teachinglearningprocessmaybeinteractiveclassroomsessions.Itincludestheoreticaldiscussionand numericalproblems solving.

AssessmentMethods

Internal Examination (15 Marks): Internal Assessment may be conducted by using any one or incombinations of Class participation, Presentation, Project Writing and Presentation, Assignment and Presentation, Surprise Test as suitable.

ExternalExamination(35Marks): EndSemesterWrittenExamination,Duration4Hours

ABILITY ENHANCEMENT COURSE -1

Course Name: English/ MIL Communication
Course Code:

Course Type: Ability Enhancement Course	Course Details: AEC-1			L-T-P: 4-0-0	
Credit: 4	Full Marks: 50	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	15	0	35

SKILL ENHANCEMENT COURSE -1

Course Name: Computer Fundamentals, IoT, and AI

Course Code: BBAHMSE101

Course Type: Skill Enhancement Course	Course Details: SEC-1			L-T-P: 2-1-0	
Credit: 3	Full Marks: 50	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	15	0	35

Course Objective:

Computer fundamentals are an essential part of learning; everyone should know how to operate computers. It gives students an in-depth understanding of the use of computers in business, society, and education. The introduction of computing devices, reinforcement of computer vocabulary, computer hardware and software, the internet, networking, and mobile computing. Provides hands-on training on Microsoft Office applications- mainly on Word, Excel, and PowerPoint- and enhancement of advanced skills. The effect of technology (AI) on society and its operations is varied. Healthcare workers who are knowledgeable about AI are needed to enable interactive and illustrative AI and ensure the caliber of AI-based systems to boost patient safety. For those involved in decision-making, purchasing, and implementing AI-based systems, knowledge of AI is also crucial. The course gives an introduction to artificial intelligence (AI) and its use in the healthcare industry.

Learning Outcomes

1. Describe the usage of computers and why computers are essential components in business and society, utilize the Internet Web resources, and evaluate online e-business systems.
2. Solve common business problems using appropriate Information Technology applications and systems.
3. Identify categories of programs, system software, and applications. Organize and work with files and folders, describe various types of network standards, and communication software.
4. Internet of Things (IoT) applications in day-to-day activities, Medical IoT applications.
5. An idea on IoT uses in hospital operations, patient satisfaction, and continuous monitoring for diagnosis, treatment, and effective utilization of resources.
6. Describe several AI techniques, including their advantages and disadvantages, for the creation of AI applications in healthcare, and compare and choose the most appropriate AI techniques.
7. Reason about legal conditions and ethical challenges in AI, and think about the challenges and motivating elements for using AI-based solutions in the healthcare industry.

Unit 1. **Introduction to Computer:** Computer Characteristics, Concept of Hardware, Software, Evolution of Computer and Generations, Types of Computer – Analog and Digital Computers, Hybrid Computers, General Purpose, and Special Purpose Computers, Limitations of Computer Applications of Computer in Various Fields.
Structure and Working of a Computer: Functional Block Diagram of a Computer. CPU, ALU, Memory Unit, Bus Structure of Digital Computer – Address, Data, and Control Bus.
Input/Output Devices: Input Device – Keyboard, Mouse, Scanner, MICR, OMR. Output Devices – VDU, Printers-Dot Matrix, Daisy-wheel, Inkjet, Laser, Line Printers, and Plotters.

Unit 2. Computer Memory: Memory Concept, Memory Cell, Memory Organisation, Semiconductor Memory – RAM, ROM, PROM, EPROM, Secondary Storage Devices – Magnetic Tape, Magnetic Disk (Floppy Disk and Hard Disk), Compact Disk.
Computer Language and Software: Algorithm, Flowcharts, Machine Language, Assembly Language, High-Level Language, Assembler, Compiler, Interpreter. Characteristics of Good Language. Software – System and Application Software.
Operating System: Evolution of Operating Systems. Functions of an Operating System. Types of Operating Systems. Detailed Study of Windows Operating System. Introduction and Features of LINUX OS.

Unit 3. Introduction to IoT: IOT concepts, IoT Standards, Components of IoT, Relevance of IoT for the future, IoT Applications in the healthcare system, Challenges in IoT implementation.
Cloud Platforms for IoT: Virtualization concepts and Cloud Architecture, Cloud computing, benefits, Cloud services — SaaS, PaaS, IaaS, Cloud providers & offerings, Study of IoT Cloud platforms.

Unit 4. Introduction to AI: Definition, Advantages of AI, Application areas of AI, Brief history of AI, Supervised, Unsupervised, and Semi-supervised learning, Introduction to pandas, Data visualization with pandas, Neural network, ANN, Applications of ANN, Deep learning, Pattern recognition, Interactive process mining.
Use of ChatGPT, Google Bard, Grammarly, QuillBot, Slide-making AI, AI for documents, Canva, Chat Bot, etc.

Unit 5. IoT &AI in Healthcare: Use of IoT in the healthcare field, the introduction of WSN, RFID, Ambient Assisted Living (AAL), Adverse Drug Reaction (ADR), Embedded Context Prediction (ECP), Wearable Device Access (WDA), Sematic Medical Access (SMA), Smart Dust in brief in the healthcare context.
AI for medical image analysis and imaging, AI for data analysis and data mining, Future applications and techniques, and Ethical and data protection issues in AI-based solutions.
Project: Breast cancer detection project, Diagnosing Coronary Artery Disease Project.

Unit 6. Microsoft Office: Document, Excel, PowerPoint- principles, and practices for the professional world; AI tools integrated with Microsoft Office- popular Practices.

Suggested Readings

1. Healthcare and Artificial Intelligence, Published by: Cédric Villani, Bernard Nordlinger, and Daniela Rus, 2020, ISBN: 3030321606, Springer.
2. Artificial Intelligence in Healthcare; edited by Adam Bohr & Kaveh Memarzadeh, Published by Academic Press, 2020, ISBN: 0128184388.
3. Artificial Intelligence in Healthcare; authored & published by: Parag Suresh Mahajan, 2nd Edition, 2019, ISBN: 9353115574.
4. Machine Learning and the Internet of Medical Things in Healthcare, edited by Krishna Kant Singh, Mohamed Elhoseni, AkanshaSinga, Ahmed A. Elngar, 2021, Published by Academic Press, ISBN- 978-0-12-821229-5, https://doi.org/10.1016/C2019-0-03077-4
5. Deep Learning and IoT in Healthcare Systems: Paradigms and Applications edited by Krishna Kant Singh, Akansha Singh, Jenn-Wei Lin, Ahmed A. Elngar, 1st Edition, 2021, Published by Apple Academic Press (Taylor & Francis), ebook ISBN: 9781003055082 https://doi.org/10.1201/9781003055082
6. A Guide to Artificial Intelligence in Healthcare by Dr. BertalanMeskó, 2019, The Medical Futurist.
7. Internet of Things and Its Applications by Prof. Satish Jain & Shashi Singh, 2020, BPB Publications.
8. Fundamentals of Computers by Er. Meera Goyal & Sushil Kumar Maurya, 2021, SBPD Publishers.
9. Fundamentals of Computers by Prof. Sarita Dhawale&Thankur Akash Ashok, ISBN: 978-81-932613-1-6, Thakur Publications Pvt. Ltd., Pune.
10. Advance Excel 2019 Training Guide: Tips and Tricks To Quick Start Your Excel Skills by Manish Nigam, 2019, BPB Publishers.
11. Microsoft Office 2019 for Dummies by Wallace Wang, 2018, Wiley.
12. BPB's Computer Course Windows 10 with MS Office 2016 by Prof. Satish Jain, 2018, BPB Publishers.

Teaching Learning Process

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, and case study discussions to ensure active participation and continuous learning.

Assessment Methods

Internal Examination (15 Marks): Internal Assessment may be conducted by using any one or a combination of Class participation, Presentation, Project Writing, Presentation, Assignment, Presentation, or Surprise Test as suitable.

External Examination (35Marks): End Semester Written Examination, Duration: 2 Hours.

SEMESTER- II

MAJOR COURSE - 2

Course Name: Medical Terminology
Course Code: BBAHMMJ201

Course Type: MAJOR	Course Details: MJC-2			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	30	0	70

Course Objective: The course consists of all types of medical terminology, prefixes, suffixes, and roots of terms related to anatomy, physiology, and diseases of the human body. This subject focuses on elementary anatomy and physiology of the human body, main systems, symptomatic and diagnostic terms, operative terms, abbreviations, and common diseases.

Learning Outcome: After completion of the course, learners can

1. Memorize medical terms, define diseases and symptoms, and read and describe the prescription.

2. Learn human anatomy and physiology from the organ and system level.

3. Understand diseases, symptoms, abbreviations, and prescription terminology related to each system and specialization.

4. Evaluate hospital equipment procurements, works, and maintenance.

5. Categories different diagnostic equipment, its works, quality, and energy efficiency.

Unit 1. Medical Terminology- Definition, basic word structure- roots, prefix, suffix; Source of medical words; basic prefixes, suffixes, and roots; terminology related to colours, location, numbers, amount, positions; common abbreviations used in prescriptions.

Unit 2. Cell, the structure of the cell, cell division; Overview of Human Anatomy and Body Systems; Tissues, Organs, Anatomical Terminology, and directional terms; Introduction to Body Planes and Cavities.

Unit 3. Musculoskeletal System: Overview, Structure, and Functions of Bone & Joints, Structure and Function of Muscles; Structure & Functions of Integumentary System- Skin, hair, and nails; Cardiovascular System- Heart, Blood, and Lymphatic Systems; Nervous System- central and peripheral; Digestive System; Endocrine System; Respiratory System; Sense Organs; Excretory System; Reproductive System- male and female.

Unit 4. Common diseases and operative terms related to human body systems: Musculoskeletal system, Integumentary system, Cardiovascular system, Blood and Lymphatic system, Nervous system, basic terms related to Psychiatry, Digestive system, Endocrine system, Respiratory system, Sensory system, Excretory system, Reproductive system, basic terms related to Oncology.

Unit 5. Pharmacology- Definition, Drugs- definition, chemical, generic, and brand name; Classification of drugs with examples.

Unit 6. Medical Transcription overview, understanding the importance of accuracy, confidentiality, and professionalism in transcription; formatting and proofreading skills and techniques; overview of documentation standards as per HIPAA and NABH; transcription equipment and software.

Suggested Readings:

1. Paramedics 6-in-1 Handbook by GD Mogli, 2nd Edition, Jaypee Brothers Medical Publishers (p) Ltd.
2. Human Physiology, Volume 1 and 2 by Dr. C. C. Chatterjee
3. Medical Terminology Workbook by M. Mastenbjork and S. Meloni, Medical Creations.
4. Textbook of Physiology by P. Sathya and Viji Devanand, by CBS Publishers & Distributors Pvt. Ltd.
5. Handbook of General Anatomy by BD Chaurasia, 5th Edition, CBS Publishers & Distributors Pvt. Ltd.
6. Textbook of Anatomy and Physiology for Nurses by PR Ashalatha and G. Deepa, 5th Edition, JAYPEE.
7. Medical Terminology Simplified by Barbara A. Gylys and Regina M. Masters, E.A. Davis Company, Philadelphia.
8. Medical Terminology Express by Barbara A. Gylys, Regina M. Masters, E.A. Davis Company, Philadelphia.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, audio-visuals, and case discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or in combinations of Class participation, Presentation, Project writing, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination, duration 4 hours.

MINOR COURSE -2

Course Name: Bio-Statistics
Course Code: BBAHMMN201

Course Type: Minor	Course Details: MNC-2			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	0	**70**

Course Objective: The objective of the "Bio-Statistics" course is to equip students with the foundational knowledge and analytical skills needed to effectively apply statistical methods to biological and medical data. The course aims to provide students with a solid understanding of statistical concepts, techniques, and their relevance in designing experiments, analyzing data, and drawing meaningful conclusions in the fields of biology, medicine, and related disciplines.

Learning Outcome:
By the end of this course, students should be able to:

1. Understand Statistical Concepts: Demonstrate a clear understanding of fundamental statistical concepts, including variables, data types, measures of central tendency, and variability.
2. Select Appropriate Statistical Methods: Identify and select appropriate statistical methods for analyzing different types of biological and medical data, considering factors such as data distribution and research objectives.
3. Design Experiments: Design experiments and studies with appropriate sampling techniques, sample size determination, and randomization to ensure valid and reliable results.
4. Interpret Results: Interpret statistical results in the context of biological and medical research questions, drawing valid conclusions and avoiding misinterpretations.
5. Handle Missing Data and Outliers: Address issues related to missing data and outliers, selecting appropriate techniques for imputation and outlier detection.
6. Communicate Results: Communicate statistical findings effectively through written reports, graphical representations, and presentations, targeting both technical and non-technical audiences.
7. Collaborate in Research Teams: Collaborate effectively within research teams, contributing statistical expertise to interdisciplinary projects and promoting effective data-driven decision-making.

Unit 1. Definition of Statistics and Bio-Statistics, importance and scope of statistics, limitations of Statistics; Types of data, important sources of secondary data; Collection and presentation of Data: different methods of collecting primary data: Tabular and graphical methods of data presentation; Frequency distribution; Diagrammatic presentation of frequency data: Line chart, Bar chart, Pie diagram, Histogram, Frequency polygon, Ogive.

Unit 2. Measures of Central Tendency: Simple and Weighted Arithmetic Mean – Properties, Merits, and Demerits; Geometric Mean and Harmonic Mean, Relationship among A.M., G.M., and H.M; Median and Mode – Measures, Properties, Merits, and Demerits.

Unit 3. Measures of Dispersion: Range, Standard Deviation, Mean Absolute Deviation, Quartile Deviation – their Properties, Merits, and Demerits; Relative Measures.
Concepts of Skewness and Kurtosis, Different Measures of Skewness and Kurtosis.

Unit 4. Concept of Correlation and Regression; Scatter Diagram; Pearson's Correlation Coefficient and its Properties; Spearman's Rank Correlation (in case of without tie); Simple Regression and its properties.
Vital Statistics: Measurement of Mortality, Measurement of Fertility, and Measurement of Population Growth.

Unit 5. Theory of Probability and Distributions: Concept and Important definition; Classical, Additive, Multiplicative, and Conditional Theorems of Probability; Student's t-test (including paired t-test), Goodness of fit, and independence of attributes through Chi-square test.

Suggested Readings:

1. Statistical Methods by N.G Das (Vol I and II), McGraw-Hill Education (India) Pvt. Ltd.
2. Mahajan's Methods in Biostatistics by Bratati Banerjee, 9th Edition, Jaypee Brothers.
3. Principles of Biostatistics by Marcello Pagano, Kimberlee Gauvreau, 2nd Edition, CRC Press.
4. Elements of Health Statistics by N.S.N Rao, Tara Publications.
5. A First Course in Probability by Sheldon Ross, 10th Edition, 2022, Pearson.
6. Fundamental of Statistics (vol. 1and2): Goon, Gupta and Dasgupta, World Press.
7. Fundamentals of Mathematical Statistics by S.C Gupta, V.K. Kapoor, 12th Edition, 2020, Sultan Chand and Sons.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or in combinations of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.

External Examination (70 Marks): End Semester Written Examination, duration 4 hours.

Multidisciplinary Course-2

Course Name: Nutrition and Public Health
Course Code:

Course Type: Multidisciplinary (Theoretical)	Course Details: MDC-2			L-T-P: 3-0-0	
Credit: 3	Full Marks: 50	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	15	0	35

VALUE ADDED COURSES - 1

Course Name: Environment Studies
Course Code: VAC201

Course Type: Value-Added Courses	Course Details: VAC-1			L-T-P: 4-0-0	
Credit: 4	Full Marks: 50	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	15	0	35

SKILL ENHANCEMENT COURSE-1

Course Name: Diagnostic Techniques in Healthcare

Course Code: BBAHMSE201

Course Type: Skill Enhancement Course	Course Details: SEC-2			L-T-P: 3-0-0	
Credit: 3	Full Marks: 50	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	15	0	35

Course Objective: The Diagnosis Techniques in Healthcare course provides a comprehensive understanding of various diagnostic techniques used in healthcare settings. It covers a wide range of diagnostic methods, including physical examination, laboratory tests, imaging, and specialized diagnostic procedures. This course aims to equip students with the knowledge and skills necessary to interpret diagnostic results, understand their clinical significance, and contribute to effective patient care and treatment planning.

Learning Outcome:

By the end of the Diagnosis Techniques in Healthcare course, students should be able to:

1. Understand the importance of accurate diagnosis in healthcare and the role of diagnostic techniques in patient care.
2. Demonstrate knowledge of various diagnostic methods, including history taking, physical examination, laboratory tests, imaging techniques, and specialized diagnostic procedures.
3. Apply appropriate techniques for gathering patient history and conducting a comprehensive physical examination.
4. Interpret laboratory diagnostic tests, including hematological, clinical chemistry, and microbiological tests.
5. Evaluate imaging techniques for diagnostic purposes.
6. Understand the principles and applications of genetic and molecular diagnostic techniques in disease diagnosis.
7. Interpret diagnostic results in specialty areas.
8. Understand the role of biopsies, pathology, and histology in the diagnostic process.
9. Stay updated with emerging diagnostic technologies and future trends in healthcare.
10. Apply critical thinking skills to assess diagnostic information and contribute to effective patient care and treatment planning.
11. Communicate and collaborate effectively with healthcare professionals, patients, and their families regarding diagnostic procedures and results.

Unit 1. Introduction to diagnostic techniques- the importance of accurate diagnostic techniques in healthcare, history of diagnostic techniques and tools in brief; patient history and documentation- components of a comprehensive physical examination- communication with the patient, confidentiality.

Unit 2. Blood test and hematology- Hemoglobin, Complete blood count (CBC), Blood typing and cross-matching, haemostasis and coagulation test; Clinical chemistry- Liver and Kidney function tests, cardiac enzymes, markers & lipid profile test. Endocrine function tests- Thyroid, Adrenal, and Diabetes related tests; Immunoglobulin and antibody tests- autoimmune disease markers, serological test for infectious disease.

Unit 3. Microbial cultural and sensitivity testing, molecular diagnosis (PCR, DNA sequencing), Identification of common pathogens; Urine test- physical, chemical, microscopic; Analysis of cerebrospinal fluid, pleural fluid, and ascetic fluid; Tumor markers for common types of cancers; Pregnancy-related tests.

Unit 4. Common equipment and diagnostic techniques: X-Ray, CT, and PET (All type) Scan, MRI, ECG, EEG, USG, Infusion and Syringe pump, Anaesthesia machine/ Boyle's apparatus, Heart-lung machine, IABP, ABG analysis machine, USG Doppler, Echocardiography, PFT, Ventilator, Diathermy, Patient Monitor, Defibrillators, Hematology analyzer/ Cell counter, Biochemistry analyzer, ESU/ Cautery machine, Suction apparatus.

Unit 5. Sterilizer- Autoclave, ETO, Plasma; Bone densitometer, C-Arm machine, Cath lab, Pacemaker, Endoscopy, Colonoscopy, Arthroscopy, Bronchoscopy, IVF, Lithotripsy, Lung Function test, FNAC, FNAB, Gastroscope, Operating Instrument set, Oxygen concentrator, Pulsoximeter, Robotic surgery.

Suggestive Readings:

1. Paramedics 6-in-1 Handbook by GD Mogli, 2nd Edition, Jaypee Brothers Medical Publishers (p) Ltd.
2. https://cdsco.gov.in/opencms/opencms/en/Medical-Device-Diagnostics/Medical-Device-Diagnostics/
3. Biomedical Equipment Management & Maintenance Program by National Health Mission, https://nhm.gov.in/index1.php?lang=1&level=3&sublinkid=1224&lid=586
4. Laboratory Equipments: Hospital Medical Equipments made Easy by R.K.V Murugan, 1st Edition, 2022, Notion Press.
5. Introduction to Biomedical Instrumentation and Its Applications by Sudip Paul et. Al., 2022, Academic Press.
6. Sonography Principles and Instruments by Frederick W. Kremkau, 10th Edition, 2020, Saunders.
7. Pocket Essential Medical Equipment by David Zhang and Norbert Banhidy, 1st Edition, 2022, CRC Press.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, and case study discussions to ensure active participation and continuous learning.

Assessment Methods: Internal Examinations (15 marks): Internal assessment may be conducted by using any one or in combinations of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.

External Examination (35 Marks): End Semester Written Examination, duration 2 hours.

SEMESTER- III

MAJOR COURSE-3

Course Name: Hospital Operation Management- II
Course Code: BBAHMMJ301

Course Type: Major	Course Details: MJC-3			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	**0**	**70**

Course Objective:

The subject focuses on the planning of the hospital and healthcare establishment, project management, and all clinical establishments and related planning within a hospital. This course will facilitate the practical approach toward the planning, building, initiating, shakedown periods, and starting the operational phase of a hospital. For further clarity, the subject focuses on project management and related functions and tools. Clinical services provided by a tertiary-level hospital are described in the subject with brief clarity. i.e., location, physical facilities, equipment, manpower, and operational issues. Case studies and lectures from industry professionals are required to fulfill the objective of the course.

Learning Outcome: After completion of the course, learners can

1. Identify the prerequisites to establish a hospital or healthcare facility.
2. Planning of a hospital, from blueprints to shakedown periods.
3. Outline the project management steps, describe its components, and solve mini-cases related to project management.
4. Categorize projects, manage teams, and estimate the project by cost-effective and cost-benefit analysis.
5. Describe different clinical services in a hospital.
6. Illustrate and demonstrate clinical services required for fully operational hospitals.
7. Dramatize different activities and argue on operations for clinical efficiency.
8. Categories: Diagnostics and Allied Services available in the Hospital.
9. Illustrated and demonstrated the diagnostic services and their operations.
10. Develop and argue hospital clinical and diagnostic services' policies and processes.

Unit 1. Define Project, Project Management, Issues & Challenges; Project Life cycle; Project constraints; Project feasibility studies; Social CBA and CEA;

Project charter, Project Planning, and Scheduling- Gantt chart and other control charts, PERT and CPM analysis, float and slacks- concept, AOA and PDM/AON Network- overview; Project risks, procurement, stakeholder management; Project report writing- DPR;
Greenfield and Brownfield projects- overview. Agile and Lean project management- overview only.

Unit 2. Hospital planning- building blocks and ideas, site selection- terrain, climatological consideration; feasibility study for the hospital; Expression of Interest, Request for proposal; Detailed project report (DPR)- Hospital overview;
Designing and landscaping- flexibility, orientation, slope study. Plans- blueprints, master plan, different designing considerations- planning grid, schematic design, stack diagram; construction of building and commissioning shakedown period- documentation.

Unit 3. Interior planning- zoning, anthropometric aspects, structural and non-structural components- water, plumbing, electricity, environmental control- HVAC, flooring, windows, doors, surface materials, ceiling, ramps, stairs, lifts; and design considerations; Safety and security.

Unit 4. Future Hospitals- Holistic Concept and Approaches; Evidence-based design, Sustainable design, Designing Green Hospitals- process, LEED & ratings, Patient-focused hospital design &process, Modular Building Concepts, Autonomous Hospital, Smart Hospital concepts and e-Hospital; Case Study on Hospital Designing- any two Indian multi or super-specialty hospitals. MediCAB: Portable hospital in India- Case Study.

Unit 5. Clinical services- Location, Design, equipment, resources allocation, and operations of - outpatient services including front office, OPD, Accident and Emergency, and Daycare Services; Inpatient services- nursing units- floor planning and management- Ward- Isolation- solarium; Intensive Care Unit (ICU)- CCU- HDU; Surgical Units – OT; LRDP Suits; Physical Medicine and Rehabilitation (PMR); Palliative care, Facilities for aged and specially-abled.

Unit 6. Location, Physical facilities, and equipment planning of diagnostic and therapeutic services- Laboratory, medical imaging, radiological services, sonography, equipment used, and advanced imaging services. NABL and AERB in brief; Medical Gases; Blood bank and Transfusion Services; Pharmacy services;
Advanced facilities- Dialysis unit, Burn unit, IVF facilities, Cancer hospital- Radiotherapy unit- Nuclear medicine unit, Psychiatry units, Telemedicine, Cyber Security & patient safety, Robotic surgery, automated and AI-assisted facilities.

Suggested Readings:

1. Fundamentals of Project Management by Joseph Heagney, 6th Edition, 2022, HarperCollins Leadership.
2. Project Management by Pradeep Pai, 2019, Pearson India.
3. Construction Management of Healthcare Projects by Sanjiv Gokhale & Thomas Gormley, 1st Edition, 2014, McGraw-Hill.
4. The Fast Forward MBA in Project Management by Eric Verzuh, 6th Edition, 2021, Wiley.

5. Innovations in Hospica Architecture by Stephen Verderber & Ben J. Refuerzo, Taylor and Francis, 2006.
6. Step by Step Hospital Designing and Planning by Sangeet Sharma, 2nd Edition, Jaypee, 2010.
7. Hospitals and Nursing Homes: Planning, Organization, and Management by Syed Amin Tabish, 2nd Edition, Jaypee, 2022.
8. Planning and Designing of Speciality Health Care Facilities by R. Chandrashekhar, Shakti Kumar Gupta, Sunil Kant, 1st Edition, Jaypee, 2021.
9. Hospitals- Facilities Planning and Management by G. D. Kunders, McGraw-Hill Education, 2017.
10. Hospital Architecture (Architecture in Focus) by Christine Nickl-Weller, Thames and Hudson, 2012.
11. Hospital Administration by D.C Joshi, Mamta Joshi, 2nd Edition, Jaypee Brothers Medical Publishers, 2022.
12. Hospitals and Medical Facilities: Construction and Design Manual by Philipp Meuser & Franz Labryga, DOM Publishers, 2019.
13. Manual for Hospital Planning and Designing: For Medical Administrators, Architects, and Planners by Ajay Garg & Anil Dewan, Springer Verlag, Singapore, 2022.
14. Airborne Infection Control Guide to Planning and Designing Hospital by Pervez Ahmed, Jaypee Brothers Medical Publisher, 2021.
15. Planning, Designing, and Construction of Health Care Facilities by Joint Commission Resources, Edited by Carolyn Schierhorn, 4th Edition, 2020, Joint Commission Resources.
16. NABH Accreditation Standards for Hospitals April 2020, 5th Edition, ISBN: 978-81-944-8776-0.
17. Hospital Pharmacy by H.P Tipnis, 2019, Career Publications.
18. Concise Textbook on Hospital Management & Patient Care in Diagnostic Radiology by N.K. Kardam and Lalit Agarwal, 2021, JBD Publications.
19. Essentials of Blood Banking and Transfusion Medicine By Ganga S. Pilli, 2021, CBS Publishers and Distributors Pvt Ltd.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or in combinations of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination.

MAJOR COURSE-4

Course Name: Community Health, Epidemiology, And Hospitals
Course Code: BBAHMMJ302

Course Type: Major	Course Details: MJC-4			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	**0**	**70**

Course Objective: To provide students with a comprehensive understanding of community health, epidemiology, and hospitals, and their role in promoting population health and healthcare delivery.

Learning Outcomes:

1. Knowledge and Understanding:
   - Define and explain the concepts of community health and epidemiology.
   - Identify the determinants of health and their impact on community health outcomes.
   - Describe the healthcare delivery system, including the role of hospitals in providing healthcare services.
   - Understand the principles and methods of epidemiology for studying diseases in populations.
2. Comprehension and Application:
   - Analyze the social, economic, and environmental factors influencing community health.
   - Apply epidemiological principles and methods to investigate and assess health issues in a community.
   - Evaluate the effectiveness of health promotion and disease prevention strategies in a community setting.
   - Examine the role of hospitals in delivering primary, secondary, and tertiary healthcare services.
3. Analysis and Evaluation:
   - Critically analyze the strengths and weaknesses of national health programs in addressing community health needs.
   - Evaluate the impact of health education and behavior change interventions on community health outcomes.
   - Assess the effectiveness of environmental health policies and occupational health programs in protecting community health.
   - Analyze and interpret epidemiological data to inform public health decision-making.
4. Synthesis and Creation:
   - Develop community health assessment plans and research proposals.
   - Design and implement health promotion campaigns targeting specific community health issues.
   - Formulate strategies to improve healthcare access and quality in underserved communities.
   - Propose evidence-based interventions for disease prevention and control in a community setting.

5. Ethical and Professional Conduct:
- Demonstrate ethical practices in community health research and data collection.
- Exhibit professionalism and cultural sensitivity in engaging with diverse communities.
- Apply ethical principles to address issues related to privacy, confidentiality, and informed consent in community health settings.
- Recognize and respect the rights and autonomy of individuals and communities in healthcare decision-making.

Unit 1. Concept of Disease- the concept of causation- Natural history of disease; concept of control; concept and modes of prevention and intervention; Introduction to public health- health promotion and disease prevention strategies; Primary Healthcare and its components; Sub-Unit-PHC- CHC; Water- Air- Housing and Sanitation quality.

Unit 2. Definition and concept of Epidemiology, Basic measurements and tools; Incidence and Prevalence- measures of disease frequency, use of routine, vital, and health statistics; Epidemiological methods- Observational, Experimental, and Analytical (Overview only); Case study- Doll and Hill's studies on smoking and lung cancer, Framingham Study.

Unit 3. Dynamics of disease transmission- mode of transmission, Host defenses, immunity, vaccines and immunoglobulins (basic knowledge)- cold chain- Universal Immunization Programme; Community health- healthcare delivery system of India- Central, State, District, and Panchayati raj level; Few National Health Programmes- National Health Mission, AB-PMJAY, RMNCH+A, NACP, NVBDCP, PMSMA, NPCDCS, and NPCB&VI.

Unit 4. Epidemiology of Communicable Diseases- Influenza, Food Poisoning, Tetanus, AIDS, Rabies; Epidemiology of Non-communicable Diseases- Hypertension, Cancer, Diabetes, Cardiovascular Diseases, Mental Health Disorders.

Unit 5. Infection control- community level; basic hygiene practices for disease prevention-community level; Hospital Acquired Infection Control- infection control committee- prevention and management; Hospital Risk Management- patient safety and care; Occupational Safety in Hospital; Biomedical Waste Management in Hospital- BMW Rule 2016- identification, segregation, packaging, transportation, storage, treatment, and disposal.

Unit 6. Disaster- types, mitigation, and management; Disaster management in Hospitals- Hospital Emergency Incident Command System- mitigation and Disaster Triage System; Internal Disaster- Various codes and commands in emergency in Hospitals- hospital security. Fire safety in Hospitals- types of fire- fire extinguishers- fire management system in hospitals- alarm, exit, safety, and engineering system.

Suggestive Readings:

1. Textbook on Preventive and Social Medicine by K. Park, 27th Edition, 2023, Banarshidas Bhanot Publisher.
2. Definition Handbook of Community Medicine by Dr. Rijul Ranjan, Bluerose Publishers Pvt. Ltd.

3. DK Taneja's Health Policies and Programmes in India by Bratati Banerjee, 17th Edition, 2022, Jaypee Brothers Med Pvt Ltd.
4. IAPSM's Textbook of Community Medicine by AM Kadri et al., 3rd Edition, 2024, Jaypee Brothers Medical Publishers (P) Ltd.
5. A Comprehensive Textbook on Community Health Nursing by Bijayalaskhmi Dash, 2nd Edition, 2023, Jaypee Brothers Medical Publishers (P) Ltd.
6. Review of Preventive and Social Medicine (Including Biostatistics) by Vivek Jain, 15th Edition, 2023, Jaypee Brothers.
7. Hospital Administration by DC Joshi and Mamta Joshi, 2nd Edition, Jaypee Brothers Medical Publishers.
8. Disaster Management for Health Care Professionals by Joshi Sonopant G, Jaypee Brothers Medical Publishers.
9. Hospital Hazards and Disaster Management by Prof. Muhammadu Sathik Raja, 2024, Academic Guru Publishing House.
10. A Manual of Fire Prevention and Fire Protection for Hospitals by Otto Robert Eichel, 2023, Legare Street Press.

Teaching-Learning Process:
The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:
Internal Examinations (30 marks): Internal assessment may be conducted by using any one or in combinations of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination.

MINOR COURSE-3

Course Name: Business Environment
Course Code: BBAHMMN301

Course Type: Minor	Course Details: MNC-3			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	**0**	**70**

Course Objective:
To provide students pursuing hospital management with a comprehensive understanding of the business environment in the healthcare industry, enabling them to analyze and adapt to the dynamic factors that influence healthcare organizations.

Learning Outcomes:
1. Knowledge:
- Define the concept of the business environment in the context of the healthcare industry.
- Identify and describe the key components of the healthcare business environment, including economic, social, legal, technological, and political factors.
- Explain the interrelationships between various elements of the business environment and their impact on healthcare organizations.

2. Comprehension:
- Interpret the implications of different economic trends and policies on hospital management decision-making.
- Analyze the social and demographic factors influencing healthcare service demand and delivery.
- Understand the legal and regulatory framework governing healthcare organizations and their implications for management practices.
- Discuss the impact of emerging technologies and innovations on healthcare operations and service delivery.

3. Application:
- Evaluate the opportunities and challenges arising from the business environment in the healthcare industry.
- Apply strategic management concepts to develop business strategies that align with the prevailing healthcare business environment.
- Propose adaptive measures to mitigate risks and capitalize on opportunities presented by the changing healthcare landscape.
- Analyze case studies and real-world scenarios to identify appropriate business responses to environmental factors.

4. Analysis:
- Analyze the competitive forces within the healthcare industry and assess their impact on hospital management.
- Evaluate the strengths, weaknesses, opportunities, and threats (SWOT) of healthcare organizations concerning the business environment.

- Assess the impact of governmental policies, regulations, and reforms on healthcare organizations and their strategic decision-making.

5. Synthesis:

- Develop innovative approaches to leverage emerging technologies and trends to improve healthcare service delivery and organizational performance.
- Formulate strategies to address challenges posed by the business environment, such as changing patient expectations, cost constraints, and competition.
- Design contingency plans to respond to potential disruptions or changes in the healthcare business environment.
- Integrate knowledge from various aspects of the business environment to propose comprehensive business strategies for healthcare organizations.

6. Evaluation:

- Critically evaluate the effectiveness of different management approaches in adapting to the business environment in the healthcare industry.
- Assess the ethical and social implications of business decisions made in response to environmental factors.
- Appraise the impact of healthcare business environment factors on financial performance, patient satisfaction, and quality of care in healthcare organizations.
- Critique and recommend improvements to existing healthcare management practices based on an understanding of the business environment.

Unit 1. Concept, nature, and importance of business and business environment – Types of the environment: general and task environment, internal and external environment, Basic elements of environment: socio-cultural, political, legal, economic, and technological elements with case studies. Business environment scanning and analysis- methods and applications; PESTEL, SWOT, and Competitors analysis.

Unit 2. **Economic Environment**: Concept, types- systems- Capitalist, Socialist, and Mixed; Macroeconomic Indicators- GDP, Inflation, Unemployment, Interest rates, Foreign exchange reserves, income distribution, infrastructure; Economic Policies- Fiscal, Monetary, and Trade. **Global economic environment**- LPG and its impact on the Indian Business Economy; EXIM Policy of India, MNC, and Foreign Investments- Strategies for entering into foreign market; most favored nations (MFN), SEZ, and its impact.

Unit 3. **Legal and Regulatory Framework**- overview, impact on business with case studies; Consumer Protection Act 1986; Companies Act 2013- salient features, corporate governance, corporate social responsibilities, types of companies, structure of the companies, MOA & AOA, Meetings; The West Bengal Clinical Establishment (Registration, Regulation, and Transparency) Act, 2017;

Intellectual Property Rights and its significance; Insurance and Tax; OECD, GATT-WTO, NAFTA, World Bank, Conflict resolution, dispute settlements, and litigation.

Unit 4. **Socio-cultural environment:** Society and groups, family and society- lifestyle, life cycle, social theory of risk perception, traditional values & modernization, impact of social environment on business;

Concept and nature of culture – Impact of culture on business – cultural resources – Culture as a change agent, Hall's map of culture, analysis, adaptation, and conflict, cross-cultural analysis; Ethics and social responsibility of business – Arguments for and against social responsibility.

Unit 5.Technological environment: Understanding technology- technology transfer, Schumacher movements & appropriate technology; Technological hazards, VUCA world and changes in technology, Industry 4.0 and 5.0- concept, Case study.
Impact of Business Environment in Healthcare: Global Health Trends and Challenges, the Role of WHO, Patient Rights and Healthcare Ethics- values, and cultural issues- abortion, euthanasia; Healthcare budgeting and financing- Pricing issues, insurance concept, economic impacts on healthcare.

Suggestive Readings:

1. Taxmann's Business Environment: The Essential Economic System by Prof. (Dr.) Satya P. Das, Prof. (Dr.) J. K. Goyal, Prof. (dr.) Dipti Kakar, March 2024, Taxmann Publications Pvt. Ltd.
2. Business Environment by K. Chidambaram and V. Alagappan, First Edition, 2021, S.Chand.
3. Business Environment: Text and Cases by Justin Paul, 4th edition, 2018, McGraw-Hill Education.
4. Business Environment by Dr. C. B. Gupta, 2022, Sultan Chand and Sons.
5. Essentials of Business Environment (Text, Cases & Exercises) by K. Aswathappa, 16th Edition, Himalaya Publishing House.
6. Business Environment by B.S. Raman and Y. S. Ganesh, 2022, Chethana Book House.
7. Business Environment by B.N. Ghosh, 2014, Oxford University Press.
8. Business Environment: Text and Cases by Francis Cherunilam, 30th Edition, Himalaya Publishing House.
9. Economic Environment of Business by Nair, Banerjee, and Agarwal, 2019, Pragati Prakashan.
10. International Business in VUCA World by Rob Van Tulder, Alain Verbeke, and Barbara Jankowska, 2019, Emerald Publishing.

Teaching-Learning Process:
The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:
Internal Examinations (30 marks): Internal assessment may be conducted by using any one or in combinations of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination.

Course Name: One from Multidisciplinary Course offered in 3rd Semester Pool

Course Code: MDC

Course Type: MD	Course Details: MD-3			L-T-P: 2-1-0	
Credit: 3	Full Marks: 50	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**15**	**0**	**35**

Course Name: English Communication

Course Code: AECE101

Course Type: AE	Course Details: AEC-2			L-T-P: 4-0-0	
Credit: 4	Full Marks: 50	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**15**	**0**	**35**

SEMESTER IV

MAJOR COURSE -5

Course Name: Hospital Operation Management- III
Course Code: BBAHMMJ401

Course Type: Major	Course Details: MJC-5			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	0	**70**

Course Objective: Modern hospitals follow the patient-centric approach with high values. The course objective for Hospital Operation Management- III is to provide students with an understanding of the various supportive and utility services and systems that are essential for the functioning of a hospital, with a focus on patient-centric care. The course is designed to meet the expectations of the hospital from the budding professionals to implement supportive and utility services towards patient-centric care, where the patient would participate in decision-making along with the healthcare facilitators. The various information technology-enabled facilities in the patient care system of a hospital at large are included in the course.

Learning Outcomes: The learning outcomes of Hospital Operation Management- III are

1. Study patient-centric management principles and how they can be applied in a hospital setting to improve patient satisfaction and quality of care.
2. Apply the principles of patient-centric management in improving patient satisfaction and quality of care, and develop effective communication and collaboration within the hospital environment.
3. Understand the importance of support and utility services in a hospital setting and their role in ensuring efficient and effective patient care.
4. Learn about different types of support and utility services and their specific responsibilities and functions.
5. Analyze case studies and real-world examples of effective support and utility services and patient-centric management in hospitals.
6. Develop the skills and knowledge necessary to manage and improve support and utility services and management strategies in a hospital setting.
7. Understand how to use data and analytics to continuously improve the performance of support and utility services and the patient-centric approach.
8. Learn about the hospital's internal and governmental information services, use of online applications, and their role in healthcare.

Unit 1. The patient-centric approach of Modern Hospitals, Patient satisfaction, feedback system, VIP and emergency patient care, Grievance handling mechanism; Duties and responsibilities of the Hospital Operations department, Skills required to utilize the patient-centric approach of the hospital, Documentation policies, and SOP.

Unit 2. Supportive Services- meaning, importance, and types of supportive services in a hospital. Location, design, physical facilities and equipment, staffing, and functions of the following Supportive Services:

- CSSD
- Pharmacy
- Physical Medicine and Rehabilitation
- Telemedicine- NMC standards
- Insurance and TPA
- Medical Social Workers
- Hospital statistical services and health service data

Unit 3. Utility Services I- meaning, importance, and types of utility services in a hospital. Location, design, physical facilities and equipment, staffing, and functions of the following Utility services:

- Transport Services
- Mortuary Services
- Linen and Laundry Services
- Housekeeping
- Security Services

Unit 4. Utility Services-II: Location, design, physical facilities and equipment, staffing, and functions of the following Utility services

- Hospital engineering and maintenance services, HVAC
- Dietary services
- Hospital waste management
- Hospital store and supply

Unit 5. Software management and Hospital Information Systems: IT in healthcare; MIS; HIS and its components- Cloud-based healthcare management system (e.g., HINAI), IPD and OPD management system including booking, hospital store management system, Blood bank & transfusion management system (ROKTOKOSH), Vendor management applications, Government online portals like ABHA, Co-WIN, Aarogya Setu, etc.

Suggested Readings:

1. Hospital Supportive Services: Hospital Administration in the 21st Century by S.L Goel and R. Kumar, Deep & Deep Publications, 2004.
2. Patient Care Services and Hospitals by S. Porkodi, Excel Books, Latest Edition.
3. Hospital Supportive Services- Sangeetha Natarajan, Excel Books, Latest Edition.
4. Hospitals- facilities planning and management by G.D. Kunders, McGraw-Hill Education, 2017.
5. Hospital Administration by DC Joshi, Mamta Joshi, 2nd Edition, Jaypee Brothers Medical Publishers, 2022.
6. Hospital Information System: A concise study by S. A. Kelkar, Prentice Hall India Learning Private Limited, 2010.

7. Management Information System by K.C Laudon and Jane P. Laudon, 7th Edition, Pearson India, 2022.
8. Managing a CSSD: A Personal Perspective by Joan M. Losper, Kindle Edition, 2021.
9. Hospital and Nursing Homes Planning, Organizations and Management by Syed Amin Tabish, 2nd Edition, Jaypee Brothers Medical Publishers, 2022.
10. Patient Centric Healthcare by Sanjay Rajpal, Kindle Edition, 2021.
11. Hospital Administration and Management: A Comprehensive Guide by Joydeep Das Gupta, 2nd Edition, 2015, Jaypee Brothers Medical Publishers.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or in combinations of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination, duration 4 hours

MAJOR COURSE – 6

Course Name: Accounts and Financial Management in Hospitals
Course Code: BBAHMMJ402

Course Type: Major	Course Details: MJC-6			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	0	**70**

Course Objective: To provide students with a comprehensive understanding of the financial management of healthcare organizations. This includes topics such as basic accounting, revenue management, financial analysis, cost accounting, capital budgeting, materials control, etc. The course also focuses on the unique financial challenges faced by hospitals and other healthcare organizations, such as managing the cost of providing care to uninsured patients and navigating the complex regulations that govern healthcare financing. Ultimately, the goal of the course is to equip students with the knowledge and skills they need to effectively manage the financial operations of a healthcare organization and support decision-making that aligns with the organization's mission and strategic goals.

Learning Outcomes: The learning outcomes of the course are:

1. Recognizing and recalling key terms, concepts, and processes related to hospital accounting and financial management.
2. Explaining the purpose and function of various financial statements, such as the balance sheet and income statement, and how they are used to measure the financial performance of a hospital.
3. Using financial ratios and other analysis techniques to evaluate the financial health of a hospital.
4. Breaking down financial information to identify patterns and trends that can be used to make informed financial decisions.
5. Assessing the effectiveness of a hospital's financial management strategies and making recommendations for improvements.
6. Help to develop budgets, financial plans, and other financial management tools that can be used to guide the financial operations of a hospital.

Unit 1. Accounting: Business Transaction and Basic Terminology, Need to Study Accounting, Accounting Functions, Purpose of Accounting Records, Accounting Principles – Concepts and Conventions, Accounting Equation.

Unit 2. Account Records: Principles of Double Entry System, Journal Entries, Ledger, Subsidiary Books – Cash, Sales & Purchase books, Components of Hospital Accounting; Financial Statement: Basic Financial Statements, Trial Balance, Preparation of Final Accounts, Basic Adjustments to final Accounts, Methods of Presenting Final Accounts, Practical Problem; Issues in Hospitals.

Unit 3. Introduction to materials control, stock levels, EOQ, Lead Time, Materials pricing and issues (LIFO and FIFO); Introduction to cost accounting- elements and types of cost, Cost sheet preparation (Introduction only).

Unit 4. Introduction: Definition, Scope, and Objectives of Financial Management; The goal of a Firm: Profit Maximization vs. Wealth Maximization; Financial Functions – Financing and Investment; The Role of a Finance Manager in a Hospital; Time Value of Money: Concept; Compounding and Discounting Concepts; Challenges in the Hospital Operations- Financial Perspective.

Unit 5. Basics of Capital Budgeting: Nature of investment decisions; importance of investment decisions; investment evaluation criteria; capital budgeting techniques – NPV, IRR, Payback, and accounting rate of return.

Suggested Readings:

1. Financial Management for Hospital Administration by G.R. Kulkarni, P. Satyashankar, Libert Anil Gomes, latest edition, Jaypee Brothers Medical Publishers.
2. Healthcare Finance: An Introduction to Accounting and Financial Management by Louis C. Gapenski, 4th Edition, 2023, Kindle Edition.
3. India Public Finance and Policy Report: Health Matters by Jyotsna Jalan, Sugata Marjit, and Sattwik Santra, OUP 2020.
4. Management Accounting by M.Y Khan and P.K. Jain, 8th Edition, 2021, McGraw-Hill.
5. Financial Management by I. M. Pandey, 12th Edition, 2021, Pearson.
6. Financial Management: Text, Problems, and Cases by M.Y Khan and P. K. Jain, 8th Edition, 2018, McGraw-Hill.
7. Cost Accounting: Text, Problems, and Cases by Jawahar Lal, Seema Srivastav, Manisha Singh, 6th Edition, 2019, McGraw-Hill India.
8. Introduction to Accountancy by T.S. Grewal and S.C Gupta, 2016, S. Chand Publishing.
9. Management Accounting by Dr. B.K. Mehta, 2019, SBPD Publications.
10. Introduction to Financial Management of Healthcare Organizations by Michael Nowicki, 8th Edition, 2021, Health Administration Press.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or in combinations of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination, duration 4 hours

SKILL ENHANCEMENT COURSE-3

Course Name: Data Analysis using Python

Course Code: BBAHMSE401

Course Type: Skill Enhancement Course	Course Details: SEC-3			L-T-P: 2-1-0	
Credit: 3	Full Marks: 50	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**15**	0	**35**

Course Objectives:

Students will learn how to use Python to analyze various sorts of data in this course. Students will gain knowledge of how to prepare data for research, carry out straightforward statistical analysis, produce relevant data visualizations, and forecast future trends using data.

Learning Outcomes

On successful completion of the course, students will be able to:
1. Understanding the basics of Python for performing data analysis
2. To gain insights from data, one must comprehend the data and do pre-processing, processing, and data visualization.
3. For applications in mathematics, science, and web data analysis, use various Python packages.
4. Develop the model for data analysis and evaluate the model performance.

Unit 1: Python Fundamentals for Data Analysis Python data structures, Control statements, Functions, Object Oriented programming concepts using classes, objects, and methods, Exception handling, Implementation of user-defined Modules and Packages, and File handling in Python.

Unit 2: Introduction to Data Understanding and Pre-processing Knowledge domains of Data Analysis, understanding structured and unstructured data, Data Analysis process, Dataset generation, Importing Dataset: Importing and Exporting Data, Basic Insights from Datasets, Cleaning and Preparing the Data: Identifying and Handling Missing Values.

Unit 3: Data Processing and Visualization Data Formatting, Exploratory Data Analysis, Filtering, and Hierarchical Indexing using Pandas. Data Visualization: Basic Visualization Tools, Specialized Visualization Tools, Seaborn: Creating and Plotting Maps.

Unit 4: Mathematical and Scientific applications for Data Analysis Numpy and Scipy Package, Understanding and creating N-dimensional arrays, Basic indexing, and slicing, Boolean indexing, Fancy indexing, Universal functions, Data processing using arrays, File input and output with arrays.

Unit 5: Analysing Web Data, Data wrangling, Web scraping, Combining and merging data sets, Reshaping and pivoting, Data transformation, String Manipulation, and a case study for web scraping.

Unit 6: Model Development and Evaluation Introduction to machine learning- Supervised and Unsupervised Learning, Model development using Linear Regression, Model Visualization, Prediction and Decision Making, Model Evaluation: Over-fitting, Under-fitting, and Model Selection.

Suggested Readings:

1. Learning Python, by David Ascher and Mark Lutz, Publisher O'Reilly Media.
2. "Python Programming using Problem Solving approach", by Reema Thareja, Oxford University Press
3. "Python for Data Analysis", by Wes McKinney, First edition, Publisher O'Reilly Media.
4. Learning with Python, by Allen Downey, Jeffrey Elkner, Chris Meyers, Dreamtech Press
5. Data Analysis with Python: A Modern Approach, by David Taieb, 1st Edition, Packt Publishing

Teaching Learning Process:

The teaching-learning process may be interactive classroom sessions. It includes theoretical discussion and solving numerical problems.

Assessment Methods:

Internal Examination (15 Marks): Internal Assessment may be conducted by using any one or in combinations of Class participation, Presentation, Project Writing and Presentation, Assignment and Presentation, and Surprise Test as suitable.

External Examination (35 Marks): End Semester Written Examination, Duration 2 Hours.

SEMESTER V

MAJOR COURSE-7

Course Name: Quality Management in Hospitals

Course Code: BBAHMMJ501

Course Type: MAJOR	Course Details: MJC-7			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	0	**70**

Course Objectives: The objective of the course "Quality Management in Hospitals" is to provide students with a comprehensive understanding of the principles, methodologies, and techniques involved in managing and improving the quality of healthcare services within a hospital setting. Through a combination of theoretical knowledge and practical applications, this course aims to equip students with the necessary skills to contribute to the delivery of high-quality healthcare and patient safety.

Learning Outcomes: By the end of this course, students should be able to:

1. Understand the concept of quality management in the context of healthcare, including its importance, goals, and key components.
2. Identify and evaluate different quality management models, frameworks, and standards commonly used in hospitals.
3. Analyze the role of leadership and organizational culture in fostering a culture of quality and continuous improvement in hospitals.
4. Apply quality improvement tools and techniques to identify, measure, and analyze healthcare processes, aiming to reduce errors, waste, and inefficiencies.
5. Develop skills in collecting and analyzing data to monitor and evaluate healthcare quality indicators, such as patient satisfaction, clinical outcomes, and safety measures.
6. Understand the importance of patient-centered care and effectively communicate with patients and their families to ensure their involvement in quality improvement efforts.
7. Explore strategies for managing and mitigating risks in healthcare, including the identification of potential hazards, implementation of preventive measures, and effective incident reporting systems.
8. Evaluate the impact of healthcare policies, regulations, and accreditation programs on quality management in hospitals, i.e., NABH, NABL, and JCI.
9. Understand the ethical considerations and legal implications related to quality management, including patient privacy, confidentiality, and informed consent.
10. Develop skills in project management and teamwork to effectively implement quality improvement initiatives within a hospital setting.

Unit 1. Definition of quality, the evolution of the concept of quality- different quality gurus and their works in brief; characteristics of quality; Cost of Quality; Present international scenario of quality management; International societies for quality in healthcare, Accreditation bodies- ISO, NABH, NABL. JCI, HFAP, Accreditation Canada, ACHS, EFQM, etc. (Overview and roles)

Unit 2. Quality criteria and aspects in hospitals; quality improvement process in healthcare; structures for managing quality, outcomes of quality management systems in healthcare; Identification of quality problems in healthcare; quality assurance processes;

Quality tools and techniques: why-why analysis, root cause analysis, Seven basic Quality Control Tools- Check sheet, Histogram, Scatter Diagram, Process Mapping, Cause and Effect Diagram, Pareto analysis, Control chart; Kaizen, Quality Circles, 5S, Benchmarking.

Unit 3. Quality performance measurements: Patient satisfaction- QFD- SERVQUAL; Hospital Acquired Infections, Readmission rates, Mortality rates, Length of Stay, Patient Safety Indicators (PSIs), Compliance with core measures, Patient wait times, Medication errors, Care and Coordination; Patient-centric management; Clinical Auditing.

Unit 4. Hospital and healthcare Risk Management- key risk management principles and concepts, risk assessment and analysis, risk mitigation & control measures; Patient safety and risk management- Failure Mode and Effect Analysis (FMEA), Clinical audit, FSSAI & food quality audit, Sanitization, Safety audit; Crisis handling & Disaster management; Financial audit; Concept of Zero Defect, Six Sigma, and Lean Six Sigma. Case Studies on COVID-19 Situations and Clinical Error.

Unit 5. Certification and Accreditation: Concept of NABH- NABH 6th Edition- Core areas- Chapters from 1to 10; NABL- concept and core areas; NABH- Other Standards (Overview)- Blood Bank, Small Healthcare, Alternative Medicines, Sustainable Development, Healthcare Travelling; JCI- concept and Core areas; Standards of Primary level and District level hospitals in India; Importance of accreditations; Impact of accreditations on healthcare.

Unit 6. Statutory requirements for healthcare in India: Clinical Establishment Act 2010- Overview only; National Quality Assurance Standards (NQAS)- Overview and concept; Drugs and Cosmetics Act- Overview only; Medical Council of India (MCI) regulations- Overview; Central Drugs Standard Control Organization (CDSCO)- Overview only, FSSAI- overview only**.**

Suggested Readings:

1. Quality Management in Hospitals, 2009, by S.K Joshi, Jaypee.
2. Handbook of Healthcare Quality and Patient Safety, 3rd Edition-2023, by Gyani J. Girdhar, Jaypee Brothers Medical Publishers.
3. Standard Operating Procedures SOP for Hospitals, 2nd Edition, by Dr. Arun K. Agarwal, Notion Press.
4. Checklists for Hospitals by Dr. Arun K. Agarwal, Notion Press.
5. NABH Accreditation Standards for Hospitals, 5th Edition, NABH, Dr. Atul Mohan Kochhar, Quality Council of India- NABH.
6. NABH Accreditation Standards for Hospital, 6th Edition, NABH (https://portal.nabh.co/NABHStandards.aspx#gsc.tab=0)

7. Step by Step Quality Hospital Care by Farooq Jan, Jaypee Brothers Medical Publishers Private Ltd.
8. Total Quality Management, 5th Edition, by Dale H. Besterfield, Glen H. Besterfield et al., Pearson Education.
9. Total Quality Management, 4th Edition, by Poornima M. Charantimath, Pearson Education.
10. Lean Six Sigma for Dummies, 4th Edition, by Jo Dowdall and Martin Brenig-Jones, For Dummies, 2022.
11. Applying Lean Six Sigma in Healthcare: A Practical Guide to Performance Improvement, by Thomas K. Ross, 2019, Jones & Bartlett Learning.
12. Joint Commission International Accreditation Standards for Hospitals, 6th and 7th Edition, JCI.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or in combinations of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.

External Examination (70 Marks): End Semester Written Examination, duration 3 hours

MAJOR COURSE-8

Course Name: MRD, TPA, and Risk Management

Course Code: BBAHMMJ502

Course Type: MAJOR	Course Details: MJC-8			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	0	**70**

Course Objectives:

1. To understand the fundamentals of medical records management in healthcare settings.
2. To learn the standards and guidelines for maintaining, organizing, and securing medical records.
3. To explore the legal and ethical aspects related to patient data management.
4. To develop skills in managing electronic health records (EHR) and paper-based systems.
5. To gain insight into the role of medical records in enhancing healthcare delivery and research.
6. To introduce the concept and role of Third-Party Administrators in health insurance.
7. To understand the process of claim management and settlement in healthcare.
8. To learn the legal and regulatory framework governing TPAs in the healthcare sector.
9. To develop skills in evaluating and managing healthcare claims.
10. To study the impact of TPAs on healthcare quality and efficiency.
11. To understand the principles and practices of risk management in hospitals.
12. To learn how to identify, assess, and mitigate risks in healthcare settings.
13. To explore the regulatory and legal aspects of risk management in hospitals.
14. To develop strategies for managing medical, operational, and financial risks.
15. To gain knowledge of patient safety initiatives and quality improvement techniques.

Course Outcomes:

By the end of the course, students will be able to:

1. Remember: Define key terms and concepts related to medical records (e.g., health information management, patient records), identify the functions and responsibilities of a TPA in healthcare; Define key concepts and terminology related to risk management in hospitals.

2. Understand: Explain the importance of accurate and secure medical records in healthcare operations; Explain the process of claim adjudication and management in a TPA setup; Discuss the importance of risk management in ensuring patient safety and healthcare quality.

3. Apply: Demonstrate the use of healthcare software systems for managing medical records; Execute the necessary steps in handling and processing healthcare claims. Implement basic risk management tools and techniques in a hospital setting.

4. Analyze: Assess the implications of non-compliance with legal standards in medical record management, compare different models of TPA services and assess their effectiveness; Evaluate the different types of risks (e.g., medical errors, financial risks, operational risks) that hospitals face.
5. Evaluate: Critically review different types of medical records for accuracy, compliance, and completeness. Evaluate the impact of TPAs on patient satisfaction and cost-effectiveness in healthcare, and assess the effectiveness of risk mitigation strategies and quality improvement programs in healthcare.
6. Create: Design a workflow or system to manage and improve medical record-keeping in healthcare facilities, propose strategies for improving the efficiency of TPA services in healthcare settings, and develop a comprehensive risk management plan tailored to a hospital or healthcare organization.

Unit 1. Definition, the importance of medical records; a brief history of medical records across the globe; types of medical records- outpatient basis, IMR, SOMR, POMR- SOAP; documentation requirements, characteristics of a good medical record; statutory requirements for storage and maintenance, coding, indexing, and filing; Reports and returns; Electronic Medical Records (EMR), NABH Standards for EMR System.

Unit 2. Introduction to ICD-10, systematic nomenclature of medicine system, clinical terms (in brief), the difference between ICD-9 and ICD-10, introduction to SNOMED CT, development of ICD-10-CM- latest standards- a brief discussion on coding system and chapters; ICD-10-PCS introduction and uses; Omaha system and use of NANDA system (only in brief).

Unit 3. Define Insurance- IRDA regulations- health insurance- types of health insurance; Health Insurance coverage and benefits, factors influencing Health Insurance Premiums; Government and Private Health Insurances- special emphasis on CGHS, Ayushman Bharat, Swastha Sathi, ESI. Use of medical records in Health Insurance.

Unit 4. Third-Party Administration (TPA)- Role and Functions of TPA- TPA Services and Models- TPA Operations and Claims Processing- TPA Advantages and Disadvantages- Ethical Considerations in TPA Operations; Principles of Effective TPA.

Unit 5. Risk Management in Health Insurance- Risk Management Principles and Techniques, Risk Factors in Health Insurance, Financial Implications of Risk Management; Fraud and Abuse Prevention in Health Insurance; Regulatory and Legal Frameworks in Risk Management- IRDA and other compliances.

Unit 6. Health Insurance Claims and Administration- Health Insurance Claim Process, Claim Settlement, and Reimbursement; Effective Utilization of TPA Services- Communication Skills for Health Insurance Operations- Performance Evaluation of TPAs and Providers; Role of Patient, TPA, and Hospital Administrator; Legal aspects of medical records; medical audit- importance of medical records and risk management in medical audit.

Suggested Readings:

1. Medical Records Organization and Management by G.D. Mogli, 2nd Edition, Jaypee Brothers Medical Publishers.
2. New Perspectives Medical Records: Meeting the Needs of Patients and Practitioners by Giovanni Rinaldi, 2017, 1st Edition, ISBN: 978-3319286594, Springer International Publishing Switzerland.
3. Medical Records use and abuse by Heidi Tranberg & Jem Rashbass, 2018, CRC Press.
4. Nursing Research and Statistics by Suresh K. Sharma, 3rd Edition, 2018, Elsevier India.
5. ICD-10-CM 2022 The Complete Official Codebook, 2021, American Medical Association.
6. Electronic Health Record (HER) Standards for India 2016 by e-Health Division, Department of Health & Family Welfare, GOI.
7. Understanding ICD-10-CM and ICD-10-PCS: A Worksheet by Mary Jo Bowie & Regina Schaffer, 2011, Delmar Cengage Learning.
8. Nursing Diagnosis: Definitions and Classifications 2015-2017, 10th Edition, Wiley Blackwell.
9. Electronic Medical Records: A Practical Guide for Primary Care, Current Clinical Practice series, edited by Neil S. Skolnik, 2011, Humana Press.
10. Health Insurance in India- Dr. Raj Soni, 2023, Book Rivers
11. Innovations and Advancement in Health Insurance by Jagendra Rana, 2021, Bluerose Publishers Pvt Ltd.
12. Third Party Administrators and Brand Building by Sandip Sane, Lambert Academic Publishing
13. https://policyholder.gov.in/documents/38105/40090/English+Health+Handbook.pdf/391779c9-5379-df48-7553-6f409e393fe0?t=1631522774855&download=true
14. https://www.libertyinsurance.in/Docx/IC-38.pdf
15. Insurance and Risk Management by Bimal Jaiswal and Shiva Manoj, 2020, New Royal Book Company.
16. Hospital Patient Care Relationship Coordinator by G.D. Mogli, 2018, Jaypee Brothers Medical Publishers.
17. NABH Digital Health Standards for HIS/EMR Systems, 1st Edition, 2024, NABH

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or in combinations of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.

External Examination (70 Marks): End Semester Written Examination, duration 3 hours

MAJOR COURSE - 9

Course Name: Healthcare Analytics and Informatics

Course Code: BBAHMMJ503

Course Type: MAJOR	Course Details: MJC-9			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	0	**70**

Course Objectives:

- To understand the fundamental concepts of healthcare data, including its sources, types, and quality.
- To gain knowledge of statistical methods and data mining techniques relevant to healthcare analytics.
- To develop proficiency in data cleaning, preparation, and transformation using appropriate tools and techniques.
- To interpret and communicate complex analytical findings to diverse audiences.

Learning Outcomes-

- To explain how to use health data to improve the quality of an organization.
- Formulate knowledge in the process of health care data analytics and the tools used in each step.
- Explain the general functions, purposes, and benefits of analytics in various healthcare and medical settings.
- Propose steps to familiarize students with basic analytical techniques and visualization tools.
- Improve students' understanding of the application of different analytics techniques on datasets collected from health care units.

Unit 1 Health Care data as an organization asset: Data Information, Knowledge and wisdom hierarchy (DIKW), sources of health care data- Clinical (Patient Record, Diagnostics), Operational (Workflow, Scheduling), and Financial(Billing, Insurance); Importance of data in healthcare organizations, Challenges of using data for quality and performance improvement, The basics of data governance: Privacy, Security, Regulatory compliance

Unit 2: Understanding the Data: Introduction to healthcare data- Structured vs. Unstructured; Key concepts in data understanding &Overview of the data analysis process using PowerBI, Understanding pre-processing and its role using PowerBI, Explanation of basic statistical terms (mean, median, mode), Introduction to common statistical distributions in healthcare (normal, binomial), Case Study on: How data is used to inform decision-making in healthcare

Unit 3: Introduction to Data Analytics Tools and Techniques for Healthcare: Definitions of data analytics and related terminology, the role and importance of a data analyst in healthcare, and general steps of data analytics using a No Code/Low Code Platform. Importance of interpreting and presenting healthcare data effectively. Introduction to healthcare data systems and architectures (basic concepts). Major data storage concepts: Data Warehouse, ETL (Extract, Transform, Load) – theory and significance.

Unit 4: Introduction to Data Analysis and Techniques: Introduction to prediction and classification in healthcare, regression, Regression in healthcare decision-making, a Case Study. Basic explanation of classification, Introductory overview of clustering and association. Real-world applications of these techniques: Predicting patient readmissions, improving patient satisfaction, and optimizing resource allocation.

Unit 5: Using data to drive quality improvement, Introduction to the DMAIC (Define, Measure, Analyze, Improve, Control) framework. The role of data in healthcare problem-solving, Conceptual discussion of analytical case studies, Importance of data-driven decision-making for managers, NABH Digital Health Standards for Hospital.

Suggested Readings:

1. Reddy & Aggarwal, Healthcare Data Analytics, 2023, Chapman and Hall.
2. Vikas Kumar, Healthcare Analytics Made Simple: Techniques in healthcare computing using machine learning and Python, Packt Publishing.
3. Maheshwari, Data Analytics, McGraw-Hill India
4. Mohammed Alfan, Data Analytics, Skills to Succeed.
6. Katherin Rowell, Lindsay Betzendahl, and Cambria Brown, Data Visualization for Health, 2020, Wiley.
7. Travor L. Strome, Healthcare Analytics for Quality and Performance Improvement, 2013, John Wiley and Sons INC.
8. Gerald L. Gladon, Detlev H., Donna Slovensky, Information Technology for Healthcare Managers, 9th Edition, 2021, ACHE.
9. Dheenadhayalan, S., Data Governance in Healthcare IT: Ensuring Compliance and Privacy in Medical Data Management, 2025.
10. Marc D. and Sandefer, S. 'Data Analytics in Healthcare Research', 2022, AHIMA Press.
11. Joshi, Ransom, and Ransom, The Healthcare Quality Book: Vision, Tragedy, and Tools, 5th Edition, 2022, Health Administration Press.
12. Alan Murray, Power BI for Jobseekers, 2023, BPB Publishers.
13. NABH Digital Health Standards for Hospitals, 1st Edition, 2024, NABH.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or a combination of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.

External Examination (70 Marks): End Semester Written Examination, duration 3 hours

MINOR COURSE -5

Course Name: Health Economics

Course Code: BBAHMMN501

Course Type: MINOR	Course Details: MNC-5			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	0	**70**

Course Objective:

The primary objective of the Health Economics course is to provide students with a comprehensive understanding of the economic principles and tools applied to healthcare systems. It aims to equip students with analytical skills to evaluate healthcare policies, understand healthcare financing, and assess the role of economics in decision-making processes. This course emphasizes the relationship between health, healthcare services, and economic development at the individual, community, and national levels.

Learning Outcomes

By the end of this course, students will be able to:

1. **Understand Economic Principles and Business Decisions**: Demonstrate knowledge of fundamental economic concepts and their application to healthcare systems and policies.
2. **Analyze Healthcare Markets**: Evaluate the functioning of healthcare markets, including the roles of supply and demand, and assess the impact of market failures.
3. **Evaluate Health Policies**: Critically analyze health policies and programs in terms of efficiency, equity, and effectiveness.
4. **Understand Healthcare Financing**: Examine different healthcare financing models and their implications on access, quality, and affordability.
5. **Apply Economic Evaluation Tools**: Use cost-benefit, cost-effectiveness, and cost-utility analyses to make informed decisions in healthcare management and policy development.
6. **Relate Health and Economic Development**: Understand the interlinkages between health outcomes and economic growth at the macroeconomic level.
7. **Address Global Health Challenges**: Apply economic concepts to address global health challenges, including resource allocation, health disparities, and policy interventions.

Unit 1. **Fundamentals of Economics**: Basic concepts of economics; Important terms related to economic theory, characteristics and classification of economics, Basic Economic problems; Definition and scope of health economics, Importance of health in economic development, Distinction between health and healthcare; Key concepts: efficiency, equity, and effectiveness.

Unit 2. **Demand and Supply Analysis**: Meaning- Determinants of Demand – Law of Demand and Exceptions, Demand for Healthcare- factors influencing healthcare utilization; Elasticity of Demand – Concepts and types, Measurement of elasticity.

Supply – Meaning, Determinants of supply. Law of supply- Elasticity of supply, Measurement of elasticity of supply. Healthcare providers and market structure

Demand vs Supply: Determination of equilibrium price by demand-supply interaction. Market failures in healthcare: externalities, information asymmetry, and moral hazard.

Unit 3. Production and Cost Analysis: Meaning of Production Function; Law of Variable Proportion, Iso-quant, Iso-cost lines, Choice of best input combination.

Cost function; Total, Fixed, and Variable costs; derivation of Total cost curve from Fixed and Variable cost curves. Short–run and Long-run costs, average and marginal costs.

Unit 4. **Market Morphology**: Classification of market structure; short-run and Long-run equilibrium under perfect competition, equilibrium under Monopoly, monopolistic competition, and oligopoly market; Price discrimination under monopoly.

Unit 5. **Healthcare Financing**: Overview of healthcare financing models- public, private, mixed. Healthcare financing from various sources; Healthcare expenditure trends in developing and developed countries, National Health Scheme and Out-of-the-pocket model; Health Care Budget – purpose, types, and practices in the Indian context.

Unit 6.Economic Evaluation of Healthcare: Cost-benefit, cost-effective, and cost-utility analysis; outcome measurements- QALYs and DALYs; Health is an investment- population and economic development- IHI Triple Aim Framework; Economics of healthcare problems in population: Breastfeeding, abuse of alcohol, Economics of Covid-19 Pandemic.

Suggested Readings:

1. Health Economics for Hospital Management – Shuvendu Bikash Dutta, Jaypee Brothers Medical Publishers.

2. Health Economics – Jay Bhattacharya, Timothy Hyde, and Peter Tu, Palgrave Macmillan.

3. Health Economics – Dr. Jeyasingh, Dr. D. Solomon Raj, Dr. D. Jery Josephin.

4. Health Economics – Pushpalata Pattnaik.

5. Health Economics – P. C. Das.

6. The Economics of Health and Health Care – Sherman Folland, Allen C. Goodman, Miron Stano, 8th Edition, International Student Edition, Taylor and Francis.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or a combination of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.

External Examination (70 Marks): End Semester Written Examination, duration 3 hours

SEMESTER- VI

MAJOR COURSE-10

Course Name: Project Work and Viva
Course Code: BBAHMMJ601

Course Type: MAJOR	Course Details: MJC-10			L-T-P: 0-0-10	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		60	**0**	**40**	**0**

Course Objective:
The course objective of project work and viva (or viva voce) can vary depending on the specific academic requirement, level of education, and the nature of the course or program.

Learning Outcome:
After completing the course, the student shall be able to:

1. **Application of Knowledge**: The primary objective is to apply the knowledge and skills acquired during study to a practical project. This allows students to demonstrate their understanding of theoretical concepts in a real-world context.
2. **Problem Solving**: Projects often require students to identify and solve real or simulated problems. This helps them develop problem-solving skills, critical thinking, and creativity.
3. **Research Skills**: Project work typically involves conducting research, which helps students develop research skills such as data collection, analysis, and interpretation.
4. **Project Management**: Students may learn project management skills, including planning, organizing, and executing a project. This can be valuable for future careers where project management is required.
5. **Presentation Skills**: The viva or oral examination component of the course aims to assess a student's ability to communicate and defend their project work. This helps improve presentation and communication skills.
6. **Evaluation and Assessment**: It provides an opportunity for instructors to assess students' understanding of the subject matter, their ability to apply concepts, and the quality of their work.

7. **Feedback and Improvement**: The feedback received during the viva and project evaluation can be used for improvement. Students can identify areas of weakness and work on enhancing their skills and knowledge.

8. **Integration of Learning**: Project work often requires students to integrate knowledge from multiple areas or subjects, promoting a holistic understanding of the topic.

9. **Preparation for the Real World**: Project work and viva assessments simulate real-world scenarios where professionals are required to complete projects, present findings, and defend their work.

10. **Assessment of Soft Skills**: In addition to technical skills, project work, and viva can assess soft skills like teamwork, time management, and adaptability, which are crucial in many professions.

11. **Building Confidence**: Completing a project and presenting it during a viva can boost a student's confidence in their abilities and preparation for future challenges.

12. **Documentation Skills**: Students may be required to document their project work, which improves their ability to write reports and documentation, a valuable skill in many fields.

Assessment Methods:

Internal Examinations (60 Marks): Internal Assessments may be conducted by using any one or a combination of Presentations, Project Writings and Presentations, Assignments, and Presentations.

External Examinations (40 Marks): End Semester Project Reports, Viva, and Presentations.

MAJOR COURSE - 11

Course Name: Marketing Management and Human Resource Management
Course Code: BBAHMMJ602

Course Type: MAJOR	Course Details: MJC-11			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	0	**70**

Course Objectives:

- To provide students with a comprehensive understanding of marketing and human resource management principles, tools, and strategies.
- To equip students with the ability to analyze and apply marketing and HR concepts in real-world organizational settings.
- To enable students to integrate marketing strategies with HR functions for achieving organizational goals.
- To foster critical thinking and decision-making skills required for managing both marketing and human resources effectively.

Learning Outcomes:

1. **Remembering**
   - Define core concepts in both Marketing Management and Human Resource Management, such as the marketing mix, segmentation, recruitment, selection, and performance appraisal.
   - Recall foundational theories, models, and frameworks related to consumer behavior, market strategies, and human resource functions.

2. **Understanding**
   - Explain the role of marketing and HR in driving organizational success and how these two areas are interconnected.
   - Describe the processes of market research, consumer segmentation, and HR planning in an organizational context.
   - Understand the impact of external factors (e.g., economic, legal) on marketing and HR strategies.

3. **Applying**
   - Apply marketing mix strategies and HRM practices (e.g., recruitment and employee training) to real-life business problems.
   - Demonstrate the integration of marketing and HR strategies, such as using HR-driven branding to improve marketing effectiveness and employer branding.
   - Implement marketing and HR analytics tools for decision-making and performance management.

4. **Analyzing**

- Analyze the interdependence of marketing and HR strategies and how they contribute to achieving long-term organizational goals.
- Examine case studies to identify effective marketing campaigns and HR practices and assess their impact on the organization.
- Compare and contrast different marketing and HR management strategies to determine their appropriateness in various business contexts.

5. **Evaluating**

- Critically evaluate the effectiveness of marketing and HR strategies in achieving organizational goals, including customer satisfaction, employee performance, and market growth.
- Assess the ethical implications of marketing practices and HR policies and their influence on stakeholders, including employees and customers.
- Judge the efficiency of marketing and HR initiatives using key performance indicators (KPIs) and propose improvements.

6. **Creating**

- Design an integrated marketing and human resource strategy for a business that aligns marketing objectives with HR goals, such as leveraging talent management for customer satisfaction.
- Create innovative solutions that address marketing challenges through effective human resource management practices, like improving customer service via employee engagement programs.
- Develop a comprehensive business plan that includes both marketing campaigns and HR development strategies to enhance overall organizational performance.

Unit 1. Introduction to Marketing: Definition, Nature, Scope & Importance of Marketing; Marketing concepts - traditional and modern; Marketing Environment; Marketing- Mix.

Unit 2. **Consumer Behaviour and STP**: Nature and Significance of Consumer behaviour; Stages and participation in the buying process; Market Segmentation, Targeting, and Positioning; Case Study on Consumer Behaviour.

Unit 3.

- **Product:** Concept of Product, Product mix. Product life cycle & its Stages
- **Price:** Price, Factors affecting price, Methods of pricing
- **Place:** Concept & Importance. Types of distribution channels, Factors affecting the choice of a distribution channel
- **Promotion**: Nature and importance of promotion, Promotional methods, Advertising, Personal selling & Sales promotion.

Case Study from the relevant field.

Unit 4: Human Resource Management- Concept: Nature; Scope; Objectives and Importance of Human Resource Management; Evaluation of Human Resource Management; Role; Function

and Qualities of Human Resource Manager; Difference between Human Resource Management and Personnel Management; Challenges of Healthcare Human Resources.

Unit 5: Human Resource Planning– Meaning, Objective, and Importance of Human Resource Planning; Human Resource Planning Process; Recruitment – Objective and Sources of Recruitment; Meaning and Purpose of Selection – Selection Process; Steps in Selections; Selection techniques, Induction.

Unit 6: Training and Development; Meaning; Importance and Objective of Training; Steps in Training; Organizing Training Programme; Training Vs Development; Training Methods; Evaluation of Training Programmes; Performance Appraisal- meaning, objective, and techniques; Career Development.

Suggested Readings:

1. Marketing Management, Philip Kotler-Prentice hall-India
2. Marketing management, K. Karunakaran- Himalaya Publishing House
3. Marketing management, Rajan Saxena-Tata McGraw-Hill
4. Marketing Management, Ramaswamy &Namakumari.
5. Essentials of Human Resource Management- Indranil Mutsuddi- New Age Internationals
6. Human Resource Management- Text and Cases, K. Aswathappa and Sadhna Dash,10th Edition 2023, McGraw-Hill.
7. Human Resource Management (An Indian Adaptation), Susan L. Verhulst, David A. DeCenzo, Rama Shankar Yadav- 13ed 2021, Wiley.
8. Human Resource Management, Rajanikant Verma & Amita Yadav- 1st Edition 2023, Bharti Publications
9. Hospital Administration and Human Resource Management, D.K Sharma & R.C. Goyal- 7th Edition 2017, PHI Learning.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or in combinations of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination, duration 3 hours

MAJOR COURSE-12

Course Name: Clinical and Business Law
Course Code: BBAHMMJ603

Course Type: MAJOR	Course Details: MJC-12			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	0	**70**

Course Objectives:
The objective of the Clinical and Business Law course is to provide students with an understanding of the legal principles and regulations that apply to healthcare providers and organizations, as well as legal issues that arise in the operation of a business. This includes topics such as medical malpractice, patient rights, healthcare regulations, contract law, company law, etc. The course also teaches the students how to identify and mitigate legal risks in a healthcare or business setting. The goal of the course is to give students the knowledge and skills needed to navigate the legal complexities of the healthcare and business industries and make informed decisions.

Learning Outcomes:

The learning outcomes of the Clinical and Business Law course are:

1. Students will be able to recall key principles of business law, like the Contract Act, Companies' law, or Clinical law, like the MTP Act, PNDT Act, etc.
2. Students will be able to understand the legal implications of various clinical and business practices.
3. Students will apply legal principles to real-world scenarios in the clinical and business setting. Hospital administrators need this skill for the application of various laws and regulations in complex healthcare service setups.
4. Students will be able to analyse legal cases and statutes related to legal issues in business and clinical law.
5. Students will be able to evaluate the effectiveness of legal principles in protecting the rights and interests of stakeholders in clinical and business contexts.
6. Students will be able to create legal documents such as contracts and policies in compliance with clinical and business law.

Unit 1. Introduction to the Constitution of India- Preamble, fundamental duties, and rights; Constitutional provisions in healthcare by the Ministry of Health and Family Welfare, GOI. Introduction to the Indian legal system- distribution of power and hierarchy, Definition of Law- source of mercantile laws in India- bill and process to make a law in India.

Unit 2. Introduction to Contract Act: Definition, essential elements of a valid contract, types of contracts, offer, acceptance, consideration, capacity to contract, free consent; quasi and

contingent contract; Hospital as a Bailor and Bailee; discharge of a contract, remedies for breach of a contract.

Unit 3.

- Sales of Goods Act 1930, Formation of the contract of sale of goods, condition, and Warranty, Transfer of Property in goods, the performance of Contract of Sales, Unpaid Seller;
- Negotiable Instrument Act 1981: Definitions and Characteristics of negotiable instruments, Holder and holder in due course, Crossing of the cheque, Dishonour, and discharge of negotiable instruments.

Unit 4.

- ESI Act 1948,
- Factories Act 1948,
- Partnership Act 1932: Definition; Nature, and kinds of Partnership, Rules regarding registration; Rights, and Duties of Partners; Dissolution.

Unit 5.

- MTP Act,
- PCPNDT Act,
- Transplantation of Human Organ Act (Amendments),
- Drugs and Cosmetics Act,
- The Mental Healthcare Act 2017.

Suggested Readings:

1. Hospital Management and Administration: Principles and Practice including Law by B.V. Subhrahmanyam, 1st Edition. 2018, CBS Publishers and Distributors.
2. Healthcare Law: Essentials for Medical Practice in India by Dr. Navin Kumar Koodamara, 2022.
3. Health Law by Dr. Ishita Chatterjee, 2019, Central Law Publications
4. Taxmann's Business Law by Sushma Arora, 10th Edition, 2022, Taxmann Publications Pvt Ltd.
5. Business Law by Dr. Sunita Srivastava and Rajni Gupta, Vaibhav Laxmi Prakashan, 2019.
6. Commercial Law by Arun Kumar Sen and Jitendra Kumar Mitra, 27th Edition, 2018, World Press.
7. Elements of Mercantile Law by N.D. Kapoor, 2019, Sultan Chand & Sons Pvt Ltd.
8. Laws on Hospital Administration by D. Samuel Abraham, Christian Medical Association of India, New Delhi.
9. Consumer Protection Act and Its Applicability to Medical Professionals by D. Samuel Abraham, Law Brain, Vellore.
10. Introduction to the Constitution of India by Durga Das Basu, 26th Edition, LexisNexis. Educational Printed, 2022.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or in combinations of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination, duration 3 hours

MAJOR COURSE-13

Course Name: Inventory Control, Purchase, and Store Management in Hospitals
Course Code: BBAHMMJ604

Course Type: MAJOR	Course Details: MJC-13			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	0	**70**

Course Objective: To equip students with the knowledge and skills necessary to effectively manage inventory, purchase, and store operations in healthcare settings, ensuring efficient supply chain management, cost-effectiveness, and patient care.

Learning Outcome:
By the end of this course, students will have a profound understanding of inventory control, purchasing, and store management principles in the hospital context. They will be equipped to implement efficient and cost-effective supply chain practices, contributing to the overall effectiveness and quality of patient care.

1. Knowledge:
   - Define the principles of inventory control, purchase, and store management in the context of healthcare facilities.
   - Identify different types of inventories used in hospitals and their specific roles.
   - Analyze the impact of effective inventory management on healthcare organizations' financial stability and patient satisfaction.
2. Comprehension:
   - Explain the procurement process and its importance in maintaining a consistent supply of medical equipment and consumables.
   - Interpret inventory performance metrics to evaluate the efficiency of supply chain processes.
   - Compare and contrast various inventory control methods and their applicability to different hospital departments.
3. Application:
   - Implement inventory forecasting techniques to optimize stock levels and prevent stockouts in critical areas.
   - Utilize inventory management software to monitor stock movements, expiration dates, and reorder points.
4. Analysis:
   - Assess the risks associated with inadequate inventory management and its potential impact on patient care and safety.
   - Evaluate different suppliers and negotiate contracts to obtain the best value for hospital resources.
5. Synthesis:
   - Develop comprehensive inventory control policies and procedures tailored to specific healthcare department needs.

- Devise a contingency plan for emergencies, ensuring an uninterrupted supply during crises or disasters.
- Integrate inventory management with other hospital departments to streamline workflows and reduce redundancies.

6. Evaluation:
- Assess the effectiveness of inventory control and purchase strategies in terms of cost savings and resource optimization.
- Evaluate the ethical implications of inventory management decisions, considering factors like waste reduction and sustainable practices.

Unit 1. **Materials and Purchase Management:** Materials management- overview, the modern concept, scope, and objective; Special features of materials management applied to hospitals; Purchase management- functions, cycles, negotiations, documentation, and legal requirements of purchasing.

Unit 2. **Hospital Inventory Management**: Definition of inventory; Control- need, objectives, scope, and importance of inventory control; Impact of inventory control on the profitability of the organizations; Different types of hospital inventories.
The cost associated with inventories.

Unit 3. **Selective inventory control**- concept, basis, and use of different types of selective controls- ABC, VED, HML, FSN, SDE, GOLF, SOS, XYZ. The Multiple Basic Approach to Selective Inventory Control (MBASIC) approach to Drugs.

Unit 4. **Economic Order Quantity** (EOQ): Derivation of EOQ formula, reasons to modify EOQ to suit real-life situations, Effect of quantity and price discounts on EOQ;
Just-in-time and lead time analysis; Effects of long lead time on cost and profitability; elements of lead time.
Inventory models: safety stocks, fixation of re-order level, desired inventory level, designing of Q and P models of inventory control.

Unit 5. **Store Management**: Concept of Supply Chain Management, components; Hospital Supply Chain Management; Global competitive scenario.
Hospital Stores- Organization, function, relevance & importance of store keeping; Duties and responsibilities of the storekeeper, elements of good store organizations, centralized and decentralized stores; Store layouts- factors influencing design, principles of design, layout, facilities, bin location.

Unit 6. Stocks- Stock accounting and stock recording, Different methods of stock verification, investigations on discrepancies, reconciliation; Stock adjustment, valuation, and write-off; standardization and codification; Documents used in the material function.

Suggested Readings

1. Hospital Stores Management: An Integrated Approach by Shakti Kumar Gupta and Sunil Kant, Jaypee Brothers.
2. Managing a Modern Hospital by A. V. Srinivasan, 2nd Edition, 2008, Sage Response.
3. Handbook of Drug Store and Business Management by Ashok K. Gupta, 2018, CBS.
4. Purchasing and Supply Chain Management by Monczka et.al., 7th Edition, 2020, Cengage.
5. Purchasing and Supply Management by Anna E. Fylnn and P. Fraser Johnson, 15th Edition, 2019, McGraw-Hill.
6. Store Management and Operations by Kausik Sinha, 2020, Cyscoprime Publishers.
7. Essentials of Inventory Management by Max Muller, 3rd Edition, 2019, HarperCollins Leadership.
8. Inventory Management by Riya Goel, Dr. B.B. Pandey, 2022, Sahitya Bhawan Publications.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or in combinations of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination, duration 3 hours

SUMMER INTERNSHIP-1

Course Name: Summer Internship
Course Code: SI601

Course Type: SI	Course Details: SIMC-1			L-T-P: 0-0-4	
Credit: 2	Full Marks: 50	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		30	**0**	**20**	**0**

SEMESTER- VII

MAJOR COURSE-14

Course Name: Medical Tourism and Digital Healthcare Marketing
Course Code: BBAHMMJ701

Course Type: MAJOR	Course Details: MJC-14			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	**0**	**70**

Course Objective:

- To introduce students to the concept, scope, and ecosystem of Medical Tourism in India and globally.
- To understand hospital branding, patient acquisition, and experience design in a digital environment.
- To explore digital healthcare technologies (IoT, Telemedicine, AI, Mobile Health Apps) used in marketing and service delivery.
- To enable students to design marketing strategies for healthcare institutions in the VUCA world.
- To develop ethical, legal, and cultural sensitivity in handling domestic and international patients.

Learning Outcome:

After completing the course, the student shall be able to:

CO1: Explain the concepts, trends, and drivers of medical tourism.

CO2: Analyse the competitive landscape for India's medical tourism sector.

CO3: Understand and apply digital healthcare marketing tools and techniques.

CO4: Design patient-centric marketing and branding strategies.

CO5: Evaluate regulatory, ethical, and service-quality aspects in healthcare marketing.

Unit 1. Meaning, scope, and evaluation of medical tourism in the world; Components: medical care, wellness tourism, alternative treatment; Push and Pull factors of medical tourists; India as a medical tourism hub: AYUSH, Ayurveda, Yoga, Naturopathy, Wellness resorts. Key Indian destinations for medical and wellness tourists; Key Global destinations: Thailand, Singapore, Malaysia, Turkey, UAE; Growth, opportunities, and challenges for India in medical tourism; Case Studies.

Unit 2. Stakeholders in Medical Tourism: Hospitals, facilitators, Government, insurance, travel agencies; International Patient Departments- structure & operations; Patient journey roadmap- pre-arrival, treatment stage, post-discharge, follow-up; Cultural sensitivity in patient handling, managing patient expectations and cross-cultural communications; Accreditation: NABH, JCI, ISO, and Medical Value Travel guidelines.

Unit 3. Digital Healthcare- Digital transformation of healthcare; Telemedicine, e-consultation, electronic healthcare records (EHR); m-Health apps, wearable devices, IoT-enabled monitoring; AI in healthcare delivery and predictive analytics; Chatbots for patient engagement; Data-Privacy and Cybersecurity basics in healthcare; Digital Personal Data Protection Act 2023 (DPDP 2023)- and its impact on healthcare; Review of healthcare apps as case study.

Unit 4. Introduction of digital marketing in healthcare- website design for hospitals and medical tourism companies; SEO, SEM, PPC for healthcare; Social media marketing- Facebook, Instagram, YouTube, LinkedIn, WhatsApp business API; Importance of Online Reputation Management (ORM)- Content Marketing- Vlogs, patient testimonials, virtual tours; Email automation and CRM for patient relationship management.

Unit 5. Brand building for hospitals & wellness destinations; Hospital positioning and competitive advantage; Creating value propositions for international patients; Pricing strategies- packages- insurance integration- medical Visa processes; Destination branding- Incredible India initiative- 'Heal in India.'

Unit 6. Guidelines for medical tourism in India- MVT promotion policies, Ethical marketing practices, Patient confidentiality and data protection; Cross-border care regulations; Marketing funnel for hospitals: Awareness → Engagement → Consultation → Treatment → Retention; Website strategy for hospitals and medical tourists; Case Study.

Suggested Readings:

- Connell, J. Medical Tourism: The Growth of Global Healthcare.
- Rajneesh Krishna & Amrita Banerjee. Healthcare Marketing in India.
- Philip Kotler et al. Marketing for Hospitality and Tourism
- Sneha Pathak. Medical Tourism in India
- Puneet Singh Bhatia. Fundamentals of Digital Marketing, Pearson
- Simon Kingsnorth. Digital Marketing Strategy: An Integrated Approach to Online Marketing, 2nd Edition.
- Dr. Susil S. Gadekar, Dr. Amit S. Nanwani. Digital Marketing, Thakur Publications Pvt. Ltd., Nagpur.
- Medical Tourism by Dr. Prem Jagyasi, 2nd Edition, Mudranik Technologies Pvt. Ltd.
- The Complete Medical Tourist by David Hancock, John Blake Publishers.
- Edited by Kakhaber Djakeli (and others). Modern Healthcare Marketing in the Digital Era, 2023, IGI Global

- A Back and Forth between Tourism and Health: From Medical Tourism to Global Health by Sebastien Fleuret, 2022, Wiley-ISTE.
- Dibakar Bala- Digital Marketing for Doctors

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or a combination of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination, duration 3 hours

MAJOR COURSE-15

Course Name: Medical Ethics and Psychology in Patient Care
Course Code: BBAHMMJ702

Course Type: MAJOR	Course Details: MJC-15			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	**0**	**70**

Course Objective: To provide students with a solid foundation in the ethical principles and psychological models relevant to healthcare management. Students will learn to navigate complex ethical dilemmas, understand patient behavior, enhance interpersonal communication, and apply strategies to support the mental well-being of both patients and healthcare professionals.

Course Outcome:

CO1: Understand the foundational concepts of medical ethics, historical perspectives, and the biopsychosocial model in healthcare management. (Bloom's Taxonomy Level 2: Understanding)

CO2: Apply ethical frameworks and legal guidelines to manage informed consent, patient autonomy, and privacy, especially in electronic health records (EHR). (Bloom's Taxonomy Level 3: Applying)

CO3: Analyze the psychological factors driving patient behavior, adherence to treatment, stress responses, and overall healthcare quality. (Bloom's Taxonomy Level 4: Analyzing)

CO4: Evaluate critical dilemmas regarding resource allocation, end-of-life decision-making, clinical research, and medical errors. (Bloom's Taxonomy Level 5: Evaluating)

CO5: Formulate strategies for ethical leadership, effective interpersonal communication, and stress-reduction interventions for healthcare teams. (Bloom's Taxonomy Level 6: Creating)

Unit 1. Foundation of Medical Ethics and Healthcare Values: Introduction to Bioethics (from Hippocratic Oath to modern declarations like the Declaration of Geneva, Indian Charaka and Susruta Samhita on Ethics);

The four pillars of medical ethics- Autonomy, Beneficence, Non-maleficence, and Justice; Ethical Theories in Practice- Utilitarianism vs Deontology in hospital management, Case study from Pandemics;

The role of hospital ethics committee- compositions, functions, and case review process.

Unit 2. Ethical Dilemmas, Consent, and the Law: **Informed consent**- elements of valid consent, implied vs expressed consent;
Refusal of Treatment- Managing patients who refused life-saving care due to different causes;
Confidentiality and Privacy- privileged communication, HIPAA and Indian regulations, Exception of confidentiality, case study- Tarasoff case.
Medical Negligence and Malpractice- differentiating between human error, systemic failure, and gross negligence; Absolute and Vicarious Liability; Law of Tort; Administrator's role in risk management.

Unit 3. Health Psychology and Patient Behaviour- Overview of the role of psychology in healthcare management, Historical perspectives on the integration of psychology in healthcare settings.
The Biopsychosocial Model of Illness and Diseases, The psychology of being a patient- the 'Sick Role', loss of identity, loss of self-reliance, dignity, hospital-induced anxiety, institutionalization;
Health Belief Model and Treatment Adherence- psychological barriers to follow medical advice and life-style diseases.
Pain Management Psychology- The subjective nature of pain, placebo/nocebo effects, and psychological interventions for chronic pain.

Unit 4. Clinical Communication and Empathetic Care- The Doctor-Patient Relationship; Breaking Bad News- **SPIKES** protocol; Dealing with difficult encounters- De-escalating aggressive patients/relatives, managing demanding behaviors, and understanding the psychology of fear-driven anger, Treating VIP patients.
Cultural Competence in Healthcare: Navigating psychological and ethical care across diverse religious and cultural backgrounds.

Unit 5. End of Life Care and Grief Management- Ethics of End-of-Life Decisions: Withholding vs. Withdrawing life support. Do Not Resuscitate (DNR) orders and Advance Directives (Living Wills);
Euthanasia- Active and Passive, Global and Indian regulations, Case Study on dilemma;
Palliative and Hospice Care- shift from curative to comfort care;
The Psychology of Grief: Kübler-Ross's Five Stages of Grief; How hospitals can support bereaved families (bereavement protocols, counseling).

Unit 6. Mental Health and Wellbeing of Healthcare Providers- Case study from Pandemics, **Occupational Stress** in healthcare- doctors, nurses, and frontline staff; Burnout vs Compassion fatigue.
Moral Distress- When healthcare workers are forced to act contrary to their ethical beliefs due to systemic constraints.

Creating a Psychologically Safe Workplace: Administrative interventions, peer support programs (Schwartz Rounds), and fostering institutional resilience.

Suggested Readings:

12. Practical Medical Ethics: A Basic Primer for Students and Clinicians by Syed Hasan Askari and Parvez Askari (Oxford University Press)
13. Medical Ethics: Principles, Practice and the Way Forward by Sunita Simon Kurpad and John T. Ramapuram (Elsevier)
14. "Ethics in Medicine: Autonomy, Informed Consent, and Medical Decision-Making" by Thomas Schramme and Steven Edwards (Springer)
15. "Informed Consent in Medical Practice: Principles and Challenges" by Samiran Nundy, Keshav Desiraju, and Sanjay Nagral (Elsevier).
16. "Ethics in Clinical Practice: An Interdisciplinary Approach" by Anita Ho (SAGE Publications)
17. "Healthcare Privacy and Confidentiality: Perspectives, Challenges, and Solutions," edited by Rajeev K. Bali, Harsha Ranganath, and Venkata Ratnadeep Suri (Elsevier).
18. “Clinical Ethics in New Age: A Primer for Health Care Professionals" by R. S. Grewal and Roli Mathur (Jaypee Brothers Medical Publishers)
19. "Medical Ethics: A Case-based Approach" by Nimesh G. Desai (Elsevier).
20. 9."Medical Ethics and Professionalism" by Amar Jesani and Rani Jesani (Elsevier)
21. "Healthcare Management Ethics: Concepts, Cases, and Values-Based Leadership" by Robert T. Burkholder, Donna O. Farley, and Doody Management (Jones & Bartlett Learning)
22. "Psychology in Healthcare" by Divya Mishra (Indian author) - Oxford University Press
23. "Health Psychology: A Textbook" by Raghu Ramakrishnan (Indian author) - SAGE Publications
24. "Psychology and Health" by Gurvinder Kalra and Michael Argyle (Foreign authors) - Routledge
25. "Stress, Health, and Well-Being: Thriving in the 21st Century" by Rajesh Kumar and Sheldon Cohen (Indian and foreign authors) - Springer
26. "Communication in Healthcare: A Practical Guide to Patient-Centered Care" by Kanika Malhotra and Linda Street (Indian and foreign authors) - Wolters Kluwer
27. "Patient-Centered Care: A Cultural Transformation" by Chitra Bhatia (Indian author) - Jaypee Brothers Medical Publishers
28. "Psychological Care in Physical Illness" by Malini Kudva (Indian author) - Springer
29. "Health Psychology: Biopsychosocial Interactions" by Edward P. Sarafino and Timothy W. Smith (Foreign authors) - Wiley
30. "Cognitive Behavioral Therapy for Health and Wellness: A Comprehensive Guide" by Neerja Chowdhary (Indian author) - Springer
31. "Psychology and Healthcare: A Guide for Clinical Practice" by T.A. Bridger (Foreign author) – Routledge

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or a combination of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination, duration 3 hours

MAJOR COURSE-16

Course Name: Service Marketing in Healthcare
Course Code: BBAHMMJ703

Course Type: MAJOR	Course Details: MJC-16			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	**0**	**70**

Course Objective: The healthcare industry is undergoing a massive shift from a volume-based, provider-centric model to a value-based, patient-centric ecosystem. This course explores the unique challenges of marketing healthcare services, where customers (patients) often face high anxiety, information asymmetry, and complex payment structures. Students will learn how to map the modern patient journey, leverage digital health technologies, manage service quality, and navigate the strict ethical and regulatory boundaries of healthcare marketing.

Course Outcome:

CO1: Conceptual Understanding: Students will be able to **explain and interpret** the evolving landscape of healthcare services, including the transition from volume to value, patient-centric care, service characteristics, and healthcare marketing mix. (Bloom's Taxonomy Level 2,3: Understand, and Applying)

CO2: Analyze Patient Journey and Decision Making: Students will be able to **analyze patient decision-making processes**, including patient journey mapping, information asymmetry, caregiver roles, and digital influence on healthcare choices. (Bloom's levels 4 and 5: Analyze, and Evaluate)

CO3: Evaluate Healthcare Service Delivery System: Students will be able to **evaluate and redesign healthcare service delivery systems** using service blueprinting, servicescape design, and process optimization techniques. (Bloom's Levels 4, 5, & 6: Analyze, Evaluate, and Create)

CO4: Apply Pricing and Ethical Marketing Strategies: Students will be able to **apply pricing frameworks and ethical marketing strategies** in healthcare, considering value perception, accessibility, socio-economic diversity, and regulatory complexities. (Bloom's Levels 3 and 5: Apply and Evaluate)

CO5: Assess Service Quality and Patient Satisfaction: Students will be able to **measure and evaluate healthcare service quality and patient satisfaction** using SERVQUAL, Service Gap Model, Kano Model, and outcome-based measures (PROMs, HCAHPS). (Bloom's Levels 4 and 5: Analyze and Evaluate)

CO6: Develop Analytical Decision-Making Model: Students will be able to **develop data-driven decision-making models** using MCDM techniques such as TOPSIS to rank healthcare service alternatives. (Bloom's Levels 3, 4, 6: Apply, Analyze, Create)
CO7: Design Service Recovery and Internal Marketing Strategies: Students will be able to **design strategies for service recovery, error management, and internal marketing,** focusing on patient delight, employee well-being, and long-term trust building. (Bloom's Levels 5,6: Evaluate and Create)

Unit 1. **The New Landscape of Healthcare Services**: The transition from volume to value- Provider-centric vs. patient-centric model; The credence nature of healthcare- marketing intangible, complex medical outcomes; The rise of healthcare consumerism, the empowered and informed patients;
Introduction and Definition of Service Marketing, Service characteristics, Product vs Services, Classification of Services, Service Marketing Mix- Healthcare Marketing Mix.

Unit 2. **Understanding the patient journey and decision-making**: Information asymmetry and managing patient anxiety; Mapping the continuum of care- Pre-clinical, clinical, and post clinical touchpoints- Patient Jouuurney Mapping; the role of caregivers and family members in the decision-making unit (DMU); Purchase process for services- steps; Managing online reputations- physician review, social proof, and digital footprints.

Unit 3. **Healthcare Service Delivery**: Service Blueprinting- mapping front-stage interactions and back-stage operations- Shostack Model; Managing Servicescape- Healing environment, facility design, and sensory elements in the hospital; Process Optimization- Bottleneck, wait-time, and psychology of customers during wait-time; Balancing High-Tech with High-Touch in healthcare.

Unit 4. **Healthcare Pricing, Value, Accessibility**: Concept of value and price in service- Framework for pricing decisions- Pricing approaches- Pricing Strategies; The complexity of healthcare pricing- payers, providers, out-of-the-pocket costs, insurance networks; Price transparency initiative and impact on customers' choice; Marketing healthcare for different socio-economic segments, Ethical dilemma in medical marketing- Overpromising vs realistic outcomes, Managing healthcare campaign.

Unit 5. **Quality, Patient Satisfaction, and Patient Recovery**: Expected and Perception of Patients, Measuring healthcare service quality- SERVQUAL in hospitals, HCAHPS score, PROMs (Patient-Reported Outcome Measures); Service Gap Model; Kano Model on patient satisfaction classification; Lean Healthcare.

Unit 6. **Advanced decision-Making in the Service Industry**- analytical decision model: introduction of MCDM (Multi-Criteria Decision Making), Criteria selection and weighting; TOPSIS method to rank hospitals, simple case using Excel;
Managing Error: Service failure, apologies, recovery strategy, medical error; Internal Marketing- preventing physician and front-line employee burnout, training in patient-oriented services, Patient Delight.; Building long-term community trust.

Suggested Readings:
1. Leigh Cellucci, Craig Farnsworth, et al., 'Healthcare Marketing: A Case Study Approach', ACHE Learn, 2013.
2. Richard K. Thomas, 'Marketing Health Services', 4th Edition, 2020, ACHE Learn.
3. Fred Lee, 'If Disney Ran Your Hospital: 9 1/2 Things You Would Do Differently',
4. Dr. Subramaniam Seshan Iyer, 'Marketing of Healthcare Services', 2021, Notion Press
5. Valarie A. Zeithmal et. al., 'Service Marketing: Integrating Customer Focus Across The Firm', 8th Edition, 2026, McGraw-Hill.
6. Jochen Wirtz, Christopher Lovelock, 'Service Marketing: People, Technology, Strategy' 9th Edition, 2021, World Scientific (US)
7. Sanjeev Bordoloi, James A. Fitzsimmons, Mona J. Fitzsimmons, 'Service Management: Operations, Strategy, Information Technology', 9th Edition, 2023, McGraw-Hill.
8. Prithwiraj Jana, 'Decision Theory and Analysis: Approach to MCDM', 2024, Kindle Edition.
9. Ilker Ozsahin, PhD (Editor), Dilber Uzun Ozsahin, PhD (Editor), et.al., 'Applications of Multi-Criteria Decision-Making Theories in Healthcare and Biomedical Engineering', 1st Edition, Academic Press.
10. Case Studies from Harvard Business Publishing, Ivy League, on Public Domain.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or a combination of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination, duration 3 hours

MAJOR COURSE-17

Course Name: Research Methodology in Healthcare
Course Code: BBAHMMJ704

Course Type: MAJOR	Course Details: MJC-17			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	**0**	**70**

Course Objective:

- To develop the ability to **apply research techniques in real healthcare and hospital settings** for evidence-based decision making.
- To equip students with skills to **measure and analyze patient experience, service quality, and hospital performance** using standardized models.
- To enable learners to **use analytical tools and techniques (SPSS/ Same standard software, Excel, MCDM, TOPSIS)** for healthcare data-driven insights.
- To foster competence in **evaluating healthcare processes and improving service delivery systems** through applied research approaches.
- To prepare students to **translate research findings into managerial strategies, policy recommendations, and publication-ready outputs.**

Course Outcome:

CO1: Healthcare Research Problem Formulation: Students will be able to **identify and formulate healthcare-specific research problems** using secondary data sources and evidence-based approaches. (Bloom's Levels 3 & 4, Apply & Analyze)

CO2: Applications of Healthcare Measurement Models: Students will be able to **apply and adapt healthcare measurement models** to design valid research instruments. (Bloom's Levels 3 & 4, Apply & Analyze)

CO3: Healthcare Data-Analytics and Interpretation: Students will be able to **analyze healthcare data using statistical techniques** such as reliability testing, factor analysis, and basic modeling. (Bloom's Level 4, Analyze)

CO4: Evaluation of Hospital Process & Analytics Application: Students will be able to **evaluate hospital operations and develop analytical insights** using time-motion studies, regression models, and dashboards. (Bloom's Levels 5 & 6, Evaluate & Create)

CO5: Development of Evidence-based Healthcare Insight: Students will be able to **develop data-driven insights and predictive understanding** for improving patient satisfaction and service performance. (Bloom's Levels 5 & 6, Evaluate and Create)

CO6: Scientific Writing and Publication Competency: Students will be able to **develop publication-quality research papers** using structured scientific writing, APA referencing, and ethical practices. (Bloom's Levels 5 & ^, Evalute & Create)

Unit 1. Healthcare Research Applications and Problem Contextualization: Translating healthcare issues into researchable questions; Healthcare System in India: Public vs Private vs PPP Model; Identifying research areas- patient satisfaction, hospital selection behaviour, service e quality and outcomes; Secondary data- NFHS, NSSO, WHO, MoHFW reports; Evidence-based decision-making in Hospitals.

Unit 2. Healthcare Measurement Models and Scale Adaptation: A. Service Quality and Experience Models- SERVQUAL- Gap score calculation; B. Patient Behaviour Model- Health Belief Model (HBM), Patient Journey Mapping; C. Scale Development- Adapting validated scale, Questionnaire refinement.

Unit 3. Healthcare Data Handling & Advanced Analytics: Data Preparation- Data cleaning, Missing value treatment, Outlier detection; Advanced Analysis- Reliability (Cronbach Alpha), Exploratory Factor Analysis (EFA), Introduction to Confirmatory Factor Analysis (CFA); Healthcare Analytics- Patient Segmentation, Satisfaction Modelling, Service Performance Dashboard;

Unit 4. Operational and Process-based Research in Hospitals: Time-Motion Study, Regression Model in Healthcare (Intro), Patient satisfaction modeling, Application-based Predictive analytics (intro), Dashboard Creation; Introduction to R software for data analysis.

Unit 5. Structure of scientific and social-science writing- Standard research paper structure:

- Title, Abstract, Keywords
- Introduction (problem + gap)
- Literature Review (argument building)
- Methodology (justification-based writing)
- Results & Discussion (interpretation, not repetition)
- Conclusion & Implications

Writing style- clear, concise, evidence-based arguments; APA style (Latest 7th Edition) and other types of popular referencing; Use Mendeley, Zotero; Understanding Plagiarism, similarity index, Ethics of writing research paper, and consent.

Suggested Readings:

1. CR. Kothari & Gaurav Garg, 'Research Methodology: Methods & Techniques', 5th Edition, 2023, New Age International Publishers.

2. N.K. Malhotra, Satyabhushan Das, 'Marketing Research: An Applied Orientation', 7th Edition, 2025, Pearson Education.
3. Joseph F. Hair et.al., 'Multivariate Data Analysis', 8th Edition, 2018, Cengage India Pvt. Ltd.
4. Ann Bowling, 'Research Methods in Health: Investigating Health and Health Services', 5th Edition, 2023, Open University Press.
5. Judith Green et.al., 'Qualitative Methods for Health Research', 5th Edition, Sage Pubns Ltd.
6. Eric N. Berkowitz, 'Essentials of Healthcare Marketing', 5th Edition, Jones and Bartlett Publishers, Inc.
7. Pamela S. Schindler et al., 'Business Research Methods', 14th Edition, 2026, McGraw-Hill.
8. Galit Shmueli et al., 'Machine Learning for Business Analytics: Concepts, Techniques, and Applications in R', 2nd Edition, 2023, John Wiley & Sons Inc.
9. Barbara Gastel, Robert A. Day, 'How to Write and Publish a Scientific Paper', 9th Edition, 2022, Greenwood Publishing Group.
10. American Psychological Association (APA), 'Publication Manual of the American Psychological Association,' 7th Edition, 2023, KDpublications.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or a combination of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination, duration 3 hours

MINOR COURSE-6

Course Name: Strategic Management in Health Care
Course Code: BBAHMMN701

Course Type: MINOR	Course Details: MNC-6			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	**0**	**70**

Course Objective:

- To develop an advanced understanding of strategic management concepts within the complex and dynamic healthcare environment.
- To enable students to analyze the healthcare industry structure, competition, and stakeholder dynamics for effective strategic positioning.
- To equip learners with the ability to formulate corporate and business-level strategies tailored to hospitals and healthcare organizations.
- To build competence in implementing strategies through resource allocation, leadership, and operational alignment in healthcare settings.
- To provide knowledge of performance evaluation tools such as balanced scorecard and benchmarking for assessing healthcare outcomes.
- To cultivate the ability to design innovative and technology-driven strategies in response to emerging trends like digital health and value-based care.
- To prepare students to integrate strategic thinking with policy, ethics, and sustainability considerations in the Indian healthcare system.

Course Outcome:

CO1: **Strategic Understanding in Healthcare Context**: Students will be able to **interpret strategic challenges and frameworks in healthcare systems**. (Bloom's Levels 2 & 3, Understand and Apply)

CO2: **Industry & Competitive Analysis**: Students will be able to **analyze the healthcare industry structure and competitive positioning.** (Bloom's Levels 4, Analyze)

CO3: **Strategy Formulation in Hospitals**: Students will be able to **develop corporate and business-level strategies for healthcare organizations.** (Bloom's Levels 5 & 6, Evaluate and Create)

CO4: **Strategy Implementation**: Students will be able to **apply strategic plans to healthcare operations and resource allocation.** (Bloom's Level 3 & 4, Apply & Analyze)

CO5: **Strategic Evaluation & Control**: Students will be able to **evaluate healthcare performance using balanced scorecard and benchmarking tools.** (Bloom'd Level 5, Evaluate)

CO6: Innovation & Future Strategy: Students will be able to **design innovative and technology-driven strategies for healthcare systems.** (Bloom's Level 6, Create)

Unit 1. **Strategic Thinking in the Healthcare System**: Cost vs Quality Dilemma, Accessibility vs Profitability; Transition- from Volume to Value-Based Care; Stakeholder Complexity- patients, doctors, insurers, government- Healthcare Ecosystem Mapping; Strategic intent in hospitals- Mission, Vision, and Goal aligned with Public Policies; Healthcare as Credence service- strategic implications. Relevant case study on India: Public vs Private vs PPP Model, ESG (Environmental, Social, Governance) Strategy in Hospitals.

Unit 2. **Healthcare Industry and Competitive Strategy**: Competitive dynamics in healthcare- hospital chains vs standalone; Applying Porter's 5 Forces in Healthcare Context; Strategic Positioning- Cost Leadership vs Differentiation in hospitals; Cluster Strategy- Medical Tourism Hubs with Case Study; Strategic alliances- Hospital- Insurance- Diagnostic Partnership; Hospital's own services vs Third-Party vendors; Co-petitor strategy; Blue Ocean Strategy in Healthcare- applications.

Unit 3. **Corporate and Business Level Strategy in Healthcare**: Corporate Strategies- Expansion, Vertical Integration; Portfolio Analysis- BCG & GEMckinsey (Hospital Services Perspective); Profit Impact of Marketing Strategy Model (PIMS); Strategic Business Unit (SBU)- Cardiology, Oncology, Diagnosis, Collection Centre, etc.; Competitive Strategies- Specialization vs Diversification, Asset-light strategies like ambulatory surgery care, etc.

Unit 4. **Strategic Implementation and Healthcare Operations**: Translating strategy into operations, Resource Allocation in Hospitals, Capacity Planning (Bed, ICU, OT Scheduling), Change management in healthcare; Game Theory and Healthcare; Leadership in Hospitals- Clinical vs Administrative Leadership; Agile Strategy and Lean Healthcare.

Unit 5. **Strategic Evaluation & Performance Management**: Balance Scorecard in Healthcare- Financial, Patient, Internal Process, Learning & Growth; Benchmarking- NABH, JCI standards; KPI Design- Patient Satisfaction, Bed Occupancy, Average Length of Stay; Failure Management- Readmission, Nosocomial Infection, etc.; Value-based payment metrics.

Unit 6. Digital Transformation in Healthcare- Telemedicine, AI; Platform-based healthcare strategy, Startups in Healthcare Ecosystem; Value-based healthcare model; Public health strategy and policy alignment in India; Hospital at Home model; Cybersecurity risk and generative AI in clinical and administrative strategy; Disruptive Strategy- VUCA, Innovation, customers' motive, Empowerment and Engagement.

Suggestive Readings:

1. Frank T. Rothaermel, 'Strategic Management', 5th Edition, 2023, McGraw-Hill.
2. Duncan Angwin et.al., 'Exploring Strategy', 13th Edition, 2022, Pearson Education Ltd.
3. Charles W. L. Hill et. al., 'Strategic Management: Theory & Cases: An Integrated Approach', 13th Edition, 2020, Cengage.
4. Peter M. Ginter et. al., 'Strategic Management of Health Care Organizations', 9th Edition, 2025, Wiley.
5. Burns, L., Bradley, E., Weiner, B., 'Shortell & Kaluzny's Health Care Management: Organization Design and Behaviour', 7th Edition, 2020, Cengage.
6. Stephen L. Walston, 'Strategic Healthcare Management: Planning and Execution', 2nd Edition, 2018, AUPHA/HAP Book.
7. Kaplan & Norton, 'The Balanced Scorecard.'1996, Harvard Business Review Press.
8. Robert C. Camp, 'Benchmarking: The Search for Industry Best Practices that Lead to Superior Performance', 2006.
9. Eric Topol, 'Deep Medicine: How Artificial Intelligence Can Make Healthcare Human Again', 2019, Basic Books.
10. Clayton M. Christensen et. al., 'The Innovator's Prescription: A Disruptive Solution for Healthcare', 2016, McGraw-Hill.
11. W. Chan Kim et al., 'Blue Ocean Strategy', Expanded Edition, 2015, Harvard Business Review Press.
12. Richard Rumelt, 'Good Strategy, Bad Strategy', New Edition, 2017, Profile Books.
13. Abantika Ghosh, 'Games Hospitals Play: Decoding Your Private Healthcare Experience', 2025, Bloomsbury India.
14. Mark Graban, 'Lean Hospitals', 3rd Edition, 2017, CRC Press.
15. Adam Ward, 'Lean Design in Healthcare', 2018, Productivity Press Book.
16. A.L Hamdan, 'Strategic Thinking in a Hospital Setting', 2017, Springer.
17. Brian Clegg, 'Game Theory: Understanding the Mathematics of Life', 2022, Icon Books.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or a combination of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination, duration 3 hours

SEMESTER- VIII
(4 Year UG Degree with Honours)

MAJOR COURSE-18

Course Name: Drugs Policy and Management in Hospitals
Course Code: BBAHMMJ801

Course Type: MAJOR	Course Details: MJC-18			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	**0**	**70**

Course Objective:

- To understand the role of drug policy in the safe, effective, and rational use of medicines in hospitals
- To develop knowledge of drug classification, procurement, storage, and distribution systems
- To align hospital pharmacy practices with NABH and regulatory guidelines
- To equip students with skills in drug safety, inventory control, and medication error management
- To promote patient safety and quality care through efficient drug management systems

Course Objective:

CO1: Students can explain drug policy and hospital pharmacy systems. (Bloom's Level 2, Understanding)

CO2: Students can classify and distinguish drugs based on Classification and Regulation. (Bloom's Level 2 & 3, Understanding and Apply)

CO3: Students can apply procurement and inventory techniques in a hospital scenario. (Bloom's level 3, Apply)

CO4: Students can analyze medication safety and drug distribution system's importance. (Bloom's level 4, Analyze)

CO5: Students can evaluate drug management practices based on NABH standards. (Bloom's Level 5, Evaluate)

CO6: Students can help to design effective drug policies and safety strategies for hospitals. (Bloom's Level 6, Create)

Unit 1. Introduction: Meaning and scope of drug policy, objectives of drug policy in hospitals, role of pharmacy in healthcare delivery, organization of Hospital Pharmacy- inpatient vs outpatient; Essential Drug List (EDL) & National List of Essential Medicines (NLEM- India); Rational use of medicine; Biologic vs Biosimilars, Orphan Drug Policy.

Unit 2. Classification and Types of Drugs:

Classification based on use- Antibiotic, Analgesic, Antipyretics, Antiseptics & Disinfectants, Vaccines, Emergency Drugs, Speciality Drugs.

Classification based on Regulations- Prescription drugs, Over-the-counter (OTC) drugs, Controlled/ Scheduled Drugs (Schedule H, H1, X- India).

Classification based on systems: Cardiovascular drugs, CNS drugs, Gastrointestinal Drugs, etc.

Classification of Medical Devices (CDSCO Framework): Class A, B, C, and D.

Unit 3. Drug procurement systems: centralized vs decentralized, vendor selection and rate contracts, Drug formulary management; Inventory control techniques- ABC analysis, VED analysis, EOQ (basic idea); Storage practices- Cold Chain Management, Expiry Management, LASA (Look-Alike Sound-Alike drugs); Automatic Dispensing Cabinets; Use of ASI in drug procurement and storage.

Unit 4. Drug distribution systems- Floor stock system. Unit dose dispensing, Barcode Medication Administration (BCMA), Closed-Loop Medication Administration (CLMA); Prescription handling; Medication administration process; Medication errors- types and causes; Adverse Drug Reaction (ADR), Pharmacovigilance in Hospital, Green Pharmacy.

Unit 5. NABH Guidelines- MMU standards, Safe Medication Practices, High-alert medications, Documentation and Audit requirements; Regulatory Frameworks- Pharmacy Act, Drugs and Cosmetics Act, Role of CDSCO; Quality Assurance- Drug Audits, Standard Operating Procedures (SOPs), Infection Control Linkage.

Unit 6. Hospital Drug Policy Formulation, Ethical Issues- Generic vs Branded Drugs, Over-prescription; Cost Containment Strategies; Antibiotic Stewardship Programme, Digital Pharmacy- e-prescription, Telemedicine, Hospital Information System Integration; Future Trends in Drug Management; Challenges from the Patient's point of view.

Suggested Readings:

1. G. Parthasarathi, Karin Nyfort-Hansen, 'A Textbook of Clinical Pharmacy Practice', 2020, Universities Press India Pvt. Ltd.

2. Abhinay Tiwari, Blessy Jacob, et al., 'Hospital and Clinical Pharmacy', 2025, IP Innovative Publication Pvt Ltd.

3. Dr. Bapuso V. Yadav & Dr. Adhikrao V. Yadav, 'Hospital & Clinical Pharmacy', 2023, Nirali Prakasan

4. Deepali Tomar et al., 'Textbook of Pharmacy Practice', 2023, Himalayan Publishing House.
5. Bhaskar Reddy K, 'Hospital Pharmacy Management and Functions', Lambert Academic Publishing.
6. NABH Latest Edition, https://nabh.co/
7. https://cdsco.gov.in/opencms/opencms/en/consumer/Essential-Medicines/
8. https://pharma-dept.gov.in/sites/default/files/NLEM.pdf

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or a combination of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination, duration 3 hours

MAJOR COURSE-19

Course Name: Occupational Health and Ergonomics
Course Code: BBAHMMJ802

Course Type: MAJOR	Course Details: MJC-19			L-T-P: 3-1-0	
Credit: 4	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	**0**	**70**

Course Objective:

- To develop an understanding of occupational health risks and ergonomic principles in modern workplaces
- To equip students with skills to analyze, design, and improve work systems for safety and efficiency
- To understand Indian occupational health laws and regulatory frameworks
- To promote worker well-being, productivity, and injury prevention
- To apply ergonomic and occupational health concepts in healthcare, industrial, and service sectors

Course Outcome:

CO1: Students can explain the concept of Occupational Health and the use of Ergonomics. (Bloom's level 2, Understand)

CO2: Students can apply psychological and ergonomic workplace design. (Bloom's Level 3, Apply)

CO3: Students can analyze workplace hazards and be aware of occupational diseases. (Bloom's Level 4, Analyze)

CO4: Students can evaluate ergonomic design and safety interventions. (Bloom's level 5, Evaluate)

CO5: Students can assess the occupational health system and legal compliance in the industry, especially in the healthcare field. (Bloom's level 5, Evaluate)

CO6: Students can design ergonomic and safety solutions for healthcare/ workplace systems in primary level. (Bloom's level 6, Create)

Unit 1. Foundations: Concept and Scope of Occupational Health, Ergonomics- Human Factor Engineering, Man-Machine-Environment Interaction; Objective- Safety, Productivity, Worker's

Well-being; Evolution of Occupational Health in India- DGFASLI, DGMS, NSC; Emerging Issues- Workplace stress, burnout, sedentary jobs.

Unit 2. Human body system relevant to work- Work physiology- energy expenditure, fatigue, workload; Anthropometry- body measurement in workplace design; Biomechanics- Posture, Movements, Musculoskeletal disorders (MSD); Work-rest cycle and fatigue management.

Unit 3. Workplace hazards and Occupational diseases:
Physical Hazards: Noise, Vibration, Temperature, Radiation;
Chemical Hazards: Toxic exposure, Gases, Fumes.
Biological Hazards: Infection risks, Nosocomial infection.
Psychological Hazards: Stress, Burnout, Work Pressure.
Occupational Diseases: Respiratory disorders, Skin diseases, and Repetitive strain injuries.

Unit 4. Principles of ergonomic design- 'Fit for job to the worker', Ergonomic Workstation Design- Office, Hospital, Industries; Manual Materials Handling; Cognitive ergonomics- decision making, human errors; Human-Computer Interactions; Participatory ergonomics.

Unit 5. Occupational Health & Safety system (OHS)- ISO 45001; Occupational Safety, Health, and Working Conditions Code 2020; Risk assessment and hazards control; Safety audits and inspection; Personal Protective Equipment (PPE); Hazmat suit; Role of Safety Officers.

Unit 6. Ergonomics in Hospitals- Nurse workload, patient handling; Healthcare worker safety- infection control, needle-stick injury; Workstress and burnout in healthcare professionals; Digital Ergonomics- Screen Time, Telemedicine setups; AI, Automation, and Smart Workplace; Work from home challenges; Case Studies.

Suggested Readings:
1. K. Park, 'Park's Textbook on Preventive and Social Medicine', 28th Edition, 2025, Banarsidas Bhanot.
2. R. S. Bridger, 'Introduction to Human Factors and Ergonomics', 5th Edition, 2025, CRC Press
3. Mark S. Sanders, Ernest J. McCormick, 'Human Factors in Engineering and Design', 7th Edition, 1992, McGraw-Hill.
4. S.K. Haldar, 'Industrial and Occupational Health', 2nd Edition, 2023, CBS Publishers and Distributors Pvt. Ltd.
5. David Goetsch, 'Occupational Safety and Health for Technologists, Engineers, and Managers', Global Edition, 8th Edition, Pearson.
6. Professional's Occupational Safety, Health, and Working Conditions Code 2020', 2022, Professional Book Publishers.

7. Pascale Carayon, 'Handbook of Human Factors and Ergonomics in Health Care and Patient Safety', 2nd Edition, 2017, CRC Press.
8. Dr. Ranabir Pal et al., 'Ergonomics in Healthcare: An Update', 1st Edition, 2021, Mahi Publication.
9. Dr. Ranabir Pal et al., 'Text Book on Occupational Health', 1st Edition, 2020, Century Publication.
10. Dr. Purusottam Giri, 'Occupational and Environmental Health in India', 1st Edition, 2026, IP Innovative Publication Pvt. Ltd.
11. Morgan Sutherland, 'Work from Home: Ergonomics 101,'2022.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or a combination of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination, duration 3 hours

MAJOR COURSE-20

Course Name: Entrepreneurship and Consultancy Management
Course Code: BBAHMMJ803

Course Type: MAJOR	Course Details: MJC-20			L-T-P: 3-1-0	
Credit: 4	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	**0**	**70**

Course Objective: Healthcare is notoriously resistant to traditional 'move fast and break things' entrepreneurial models due to regulatory burdens, clinical risks, and complex stakeholder networks (patients, payers, providers). This course bridges the gap between clinical needs and commercial viability. It equips future hospital administrators and healthcare founders with the dual skills of building high-impact health ventures and executing elite-level management consulting for healthcare institutions. The pedagogy relies heavily on the case method, hypothesis-driven problem solving, and real-world clinical/administrative challenges.

Course Outcome:

CO1: Students can identify entrepreneurial opportunities in healthcare. (Bloom's Level 3, Apply)

CO2: Students can Develop healthcare business model using lean startup tools (Bloom's Level 6, Create)

CO3: Apply financial and regulatory knowledge in venture creation (Bloom's level 3, Apply)

CO4: Students can analyze healthcare problems using a consulting framework. (Bloom's level 4, Analyze)

CO5: Students can design consulting solutions and implementation strategies. (Bloom's level 6, Create)

CO6: Students can evaluate and scale healthcare ventures in dynamic environments. (Bloom's Levels 5, 6- Evaluate, Create)

Unit 1. Concept, meaning, and importance of Entrepreneurship, Characteristics of an entrepreneur, Types of entrepreneurand entrepreneurships, Role of entrepreneurship in economic development, Characteristics of healthcare entrepreneurship- Hospitals, Diagnostics, Health-tech, Telemedicine; Opportunity Identification in Healthcare- Gaps in accessibility, affordability, and quality; Case Studies on Narayana Health, Thyrocare.

Unit 2. **Healthcare startup ecosystem**:
a. Healthcare Triad- navigating the competing incentives of providers (Hospitals), Payers (Insurance/ Government), and patients; b. Introduction to the Stanford Biodesign Process applied to the Indian clinical setting; c. Frugal Innovation vs. Deep Tech- from disruptive low-cost diagnosis to high-cost robotic surgery;
Design thinking in healthcare innovation, Problem- solution fit vs. Product- Market fit, Case Studies- Indian Healthcare Startups Practo, PharmEasy, etc.

Unit 3. Lean Startup methodology, Business Model Canvas; Value-proposition design- patient-centric approach; MVP (Minimum Viable Product) in Healthcare; Customer discovery- patients, doctors, administration; Models- a. Digital Health & SaaS: Telemedicine 2.0, Electronic Health Record, Clinical Decision Support System; b. New Delivery Models- Asset Light Hospital Model, Single-speciality chains, Direct to Consumer (D2C) health; Shifting from fee- for-service to outcome-based entrepreneurial model; Patenting medical device and protecting proprietary algorithms in Clinical AI.

Unit 4. **Regulatory Moats, Healthcare Venture Creation, and Financial Planning**:
The Regulatory Labyrinth- Navigating CDSCO, FDA, CE (Europe) pathways for medical devices and software as a Medical Device (SaMD); Startup formation **legal structure** in India- Licensing, Compliance; Cost Structure- CAPEX vs. OPEX in Hospitals; Unit economics of hospital and health-tech.
Revenue models- Fee- for- service, Subscription, Insurance-based; Funding- VC, Angel investors, crowdfunding, bootstrapping; Goooovernment schemesand Financial Institutions;

Unit 5. **Role of the healthcare consultant**- Consulting process: problem definition, diagnosis, recommendation; Frameworks- MECE Principle, Issue Tree, Root Cause Analysis; Data-driven consulting, stakeholder management; Use of data in healthcare consulting; Consulting Delivery- Proposal Writing, Client communication and presentation, Implementation challenges, Resistance management, KPI tracking and impact measurement.

Unit 6. Scaling healthcare ventures- multilocation expansion, Platform-based healthcare and digital ecosystem, Frugal innovation; Capacity and throughput optimization in hospitals (Social entrepreneurship in Healthcare (OT scheduling, ER triage flow, Bed Occupancy); Mergers, Acquisitions, and Integration; Quality and Accreditation consulting- NABH, JCI; Exit Strategies- Strategic Acquisition (M & A), IPO, Secondary sale to PE/VC, Growth-stage Buyout, Management Buyout, Franchise/ Network exit.

Suggested Readings:

1. Eric Ries, 'The Lean Startup,' 2011, Currency.
2. Christina D. Warner, 'The Art of Healthcare Innovation', 2019
3. Alexander Osterwalder, 'Business Model Generation', 2010, Wiley
4. Ethan Rasiel, 'The McKinsey Way', 2017, McGraw-Hill
5. Clayton M. Christensen et. al., 'Competing Against Luck', 2016, Harper Business
6. Harvard Business Review: Entrepreneur's Handbook, 2018.
7. Peter Thiel, Blake Masters, 'Zero to One', 2014, Virgin Books.
8. Veerabhadrappa Havinal, 'Management and Entrepreneurship', 2nd Edition, 2023, New Age International Publishers.
9. Steve Blank, Bob Dorf, 'The Startup Owner's Manual', 2020, Wiley.
10. Moises Velasquez-Manoff, 'Epidemic of Absence', 2013,
11. Vijay Govindarajan, Ravi Ramamurti, 'Reverse Innovation in Healthcare: How to Make Value-Based Delivery Work', 2018, Harvard Business Review.
12. Barbara Minto, 'The Pyramid Principle', 3rd Edition, 2026, FT Publishing International.
13. Alan Weiss, 'Million Dollar Consulting', 6th Edition, 2021, McGraw-Hill.
14. Ben Horowitz, 'The Hard Thing about Hard Things', 2014, Harper Business
15. Dr. R. C. Bhatia, 'Entrepreneurship: Business and Management', 2020, Sultan Chand and Sons.
16. Shalu Garg, 'Social Entrepreneurship and Incubation', 2024, Sultan Chand and Sons.
17. Marc G. Baaij, 'An Introduction to Business and Management Consultancy', 3rd Edition, 2025, Sage Publications Ltd.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or a combination of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination, duration 3 hours

MAJOR COURSE-21

Course Name: Customer Relationships in Healthcare
Course Code: BBAHMMJ804

Course Type: MAJOR	Course Details: MJC-21			L-T-P: 3-1-0	
Credit: 4	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	**0**	**70**

Course Objective: Healthcare is undergoing a radical shift from a paternalistic, provider-centric model to a consumer-driven ecosystem. Patients are now armed with data, demanding transparency, and evaluating clinical care through the lens of retail-level service experiences. This course explores the intersection of clinical empathy, behavioral economics, and digital CRM strategies. Students will learn how to map complex patient journeys, leverage health data for hyper-personalization, and build resilient systems that drive both clinical outcomes and institutional loyalty.

Course Outcome:
CO1: Students can explain patient relationship concepts and CRM in healthcare (Bloom's level 2, Understand)
CO2: Students can apply CRM tools and systems in a healthcare setting. (Bloom's level 3, Applying)
CO3: Students can analyze patient engagement and retention strategies. (Bloom's level 4, Analyze).
CO4: Students can evaluate CRM data and patient relationship performance. (Bloom's level 5, Evaluate).
CO5: Students can design comprehensive CRM strategies for healthcare organizations. (Bloom's level 6, Create)

Unit 1. Nature of relationships in Healthcare- Trust, Empathy, Continuity of care; Patient vs. Customer Concept and Ethical Dilemmas; Relationship Lifecycle- Awareness→ Treatment → Followup → Loyalty; Role of caregiver and family in relation building; Patient experience vs. Patient relationship; The Assymetry of information- hospital, patient, and doctor's relationship in the age of Google and AI; The psychology of sick consumer; Consumerism in Indian healthcare.

Unit 2. Concept of customer relationship management (CRM), Types of CRM- Operational, Analytical, and Collaborative; CRM in healthcare- Appointment, Patient database, follow-up system; Integration of CRM with HIS, HER; CRM in Healthcare vs. Retail Service; Predictive Analysis, Patient Segmentations.

Unit 3. Patient engagement strategies (SMS, Apps, Reminder), Patient retention- Continuity of care, Chronic care management, Patient loyalty programmes, Customer Lifetime Value (CLV) in Healthcare; Managing Patient expectation vs Outcome; Facility design as service tools- interior, lighting, colour, cleanliness, finesse, etc.

Unit 4. Patient data management- segmentation and personalization; CRM Analytics- patient satisfaction tracking, predictive retention model; Use of dashboard in CRM; Role of AI and Automation in patient relationship management; Privacy and data protection (DPDP Act); Net Promoter Score (NPS) and Patient Reported Experience Measures (PREM).

Unit 5. Service failures in healthcare- delays, errors, dissatisfaction; Service recovery strategies- apology, correction, compensation; Building long-term trust- transparency, communication; Internal CRM- Role of doctors, nurses, staff; Community Relationship Management; Crisis communication, patient bedside manner.

Suggested Readings:

1. Daniel D. Prior, Francis Buttle, Stan Maklan, 'Customer Relationship Management- Concept, Application, and Technologies', 5th Edition, 2024, Routledge.
2. Don Peppers, Martha Rogers, 'Managing Customer Experience and Relationship: A Strategic Framework', 3rd Edition, 2017, Wiley.
3. Zeithaml, et. al., 'Service Marketing: Integrating Customer Focus Across The Firm', 8th Edition, 2024, McGraw-Hill.
3. Eric. N. Berkowitz, 'Essentials of Healthcare Marketing', 5th Edition, 2021, Jones and Bartlett Publishers, Inc.
4. V. Kumar, Werner Reinartz, 'Customer Relationship Management: Concept, Strategy, and Tools', Standard Edition, 2018, Springer.
5. Dr. Jagadeesh Pillai, 'CRM Mastery: Building and Managing Strong Customer Relationships', 2023, Notion Press.
6. Lannie Byrd, 'Brand + Bedside: Balancing Trust and Service Line ROI in the Age of EMRs, CRMs, and AI', 2025, Independently Published.
7. Shailendra Tripathi, 'CRM in Pharmaceutical and Healthcare Marketing', 2024, Independently Published.
8. DMD Michael Sonick, 'Treating People, Not Patients', 2023, Ethos Collective.
9. Judy Allen, Susan A. Brock, 'Health care Communication using Personality Type: Patients are Different', 3rd Edition, 2025, Oxford University Press.

10. Marie-Pascale Pomey (Editor) et. al., 'Patient Engagement: How Patient-provider Partnerships Transform Healthcare Organizations', 2019, Springer Nature Switzerland AG.
11. M. Keating (Editor) et. al., 'Patient-Centered Healthcare: Achieving Co-ordination, Communication, and Innovation', 2014, Palgrave Macmillan.
12. Subhadra Rathi Lohiya, 'Unveiling Healing: The Unique Doctor Patient Relationship', 2025, Viswakarma Publications.
13. Suozhu, W., Yan, F. (2011). Research on Hospital CRM System Model Based on Multi-Agent. In: Dai, M. (eds) Innovative Computing and Information. ICCIC 2011. Communications in Computer and Information Science, vol 231. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-23993-9_3
14. T. A. Rospricilia and Mudjahidin, "Goals of Customer Relationship Management in Hospitals based on the Customer Life Cycle: A systematic literature review," *2022 International Seminar on Application for Technology of Information and Communication (iSemantic)*, Semarang, Indonesia, 2022, pp. 89-94, doi: 10.1109/iSemantic55962.2022.9920455.

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or a combination of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination, duration 3 hours

MINOR COURSE-7

Course Name: Patient Care Management System
Course Code: BBAHMMN801

Course Type: MINOR	Course Details: MNC-7			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	**0**	**70**

Course Objective:

- To develop a comprehensive understanding of patient care delivery systems across the continuum of care
- To equip students with skills in care coordination, patient flow management, and clinical operations
- To introduce case-mix systems and clinical classification frameworks (DRG, ICD, SNOMED, etc.)
- To enable data-driven decision-making in patient care and hospital performance
- To integrate quality, safety, and digital health systems in patient care management

Course Outcome:

CO1: Students will be able to **explain and interpret patient care systems across the continuum of care and levels of healthcare delivery.** (Bloom's Level 2 & 3, Understand and Apply)

CO2: Students will be able to **apply patient flow management techniques and care coordination strategies to optimize hospital operations and patient-centric care delivery.** (Bloom's Levels 3 & 4, Apply and Analyze)

CO3: Students will be able to **analyze case-mix systems and clinical coding frameworks (DRG, ICD, SNOMED, etc.) for reimbursement, benchmarking, and financial decision-making.** (Bloom's Level 4, Analyze)

CO4: Students will be able to **evaluate healthcare quality, safety, and performance using clinical, process, efficiency, and patient-centered indicators.** (Bloom's level 5, Evaluate)

CO5: Students will be able to **analyze and manage advanced patient care pathways, including emergency triage, critical care transitions, and post-acute care systems.** (Bloom's Levels 4, 5- Analyze and Evaluate)

CO6: Students will be able to **design cost-effective, value-based patient care models using DRG costing, utilization review, and outcome-based healthcare frameworks.** (Bloom's Level 6, Create)

Unit 1. Concept of Patient Care Management- continuum of care- Preventive → Curative → Rehabilitative → Palliative; Levels of Care- Primary, Secondary, Tertiary, Quaternary; Patient flows in hospital- OPD, IPD, ICU, Discharge, Follow-ups; Care pathways and Clinical Protocols; Multidisciplinary care teams;

Unit 2. Patient Flow Management- Admission, Transfer, Discharge (ADT); bed Management and Capacity Planning, Queue Management in OPD, Emergency department patient flow optimization; Discharge planning & transition of care; Role of care manager; Patient- Centric Care.

Unit 3. Case-mix system- Diagnostic-Related Groups (DRG), Case Mix Index (CMI), Resource Utilization Grouping; Prospective Payment System, The Base Rate vs. The Modifier, Financial Modelling; MS-DRG and AR-DRG; Clinical Coding System- ICD-10/11, CPT (Procedure coding), SNOMED CT, LOINC; Applications- Reimbursement, Insurance Claims, Performance Benchmarking.

Unit 4. Quality, Safety, and Outcome Management- Donabedian Model- Clinical vs. Service quality integration; Outcome Indicator- Mortality rate, Readmission rate, ALOS, Surgical success rate, Infection rates (HAI, SSI, CLABSI, CAUTI);
Process Indicators- Time to treatment, Medication error rate, Compliance with clinical protocol, Surgical checklist adherence; Patient-Centered Indicators- Patient satisfaction score, Patient Complaints & Grievance rate, PROMs, PREMs; Efficiency Indicators- Bed occupancy rate, Bed turnover rate, OPD waiting time, ICU utilization, OT scheduling; Safety Indicators- Adverse events, Sentinel events, Falls and Pressure Ulcers, Medication safety incidents.

Unit 5. The Emergency Severity Index (ESI), Observation vs. Admission; Predictive Acuity- clinical early warning scores like MEWS (Modified Early Warning Score); Critical care to step-down- ICU → HDU → General Acute Ward; Post-Acute Care transition- Long Term Acute Care Hospitals (LTACH), Inpatient rehabilitation, Delayed Transfers of Care (DTOC);
Ambulatory & Day-care Surgery, Palliative vs. Hospice care; Behavioural and Psychiatric Holds; Patient flow management- Throughput Optimization, The ED Boarding Crisis, Discharge Before Noon (DBN) Initiative.

Unit 6. Cost of care per patient- resource allocation, Overuse vs. Underuse of services; DRG-based costing, Package-based care; Value-based healthcare- Concept Outcome/cost, measure value in patient care, bundled payment model, pay-for-performance system; Clinical utilization review, length of stay optimization, avoidable admission, cost-quality balance; Access vs. Affordability, Equity in patient care delivery.

Suggested Readings:

1. GD Mogli, 'Patient Care Relationship Coordinator', 2017, Jaypee Brothers Medical Publishers.
2. Seema Mehta, 'Managing Patient Centered Care: The Art of Finding and Keeping Loyal Patients', 2015, Jaypee Brothers Medical Publishers.
3. Girdhar J. Gyani, Alexander Thomas, 'Handbook of Healthcare Quality and Patient Safety', 3rd Edition, 2023, Jaypee Brothers Medical Publishers.
4. Leigh W. Cellucci et. al., 'Essentials of Healthcare Management: Cases, Concepts, and Skills', 2nd Edition, 2019, Academic Series.
5. Lawton Burns et. al., 'Shortell & Kaluzny's Health Care Management: Organization Design and Behaviour', 7th Edition, 2024, Cengage.
6. Corinne M. Karuppan et. al., 'Operations Management in Healthcare: Strategy and Practice', 2nd Edition, 2021, Springer Publishing Company.
7. Bohdan W. Oppenheim, 'Lean Healthcare System Engineering for Clinical Environments', 2021, Routledge.
8. Daniel B. McLaughlin et al., 'Healthcare Operations Management', 4th Edition, 2022, AUPHA/HAP.
9. Jan Vissers et. al., 'Operations Management for Healthcare', 2nd Edition, 2022, Taylor and Francis.
10. Patrice L. Soath, Kenneth A. Devane, 'Introduction to Healthcare Quality Management', 4th Edition, 2022, Gateway to Healthcare Management.
11. Reinhard Busse et. al., 'Diagnosis-Related Groups in Europe', 2011, Open University Press.
12. https://icd.who.int/en/
13. https://www.cms.gov/
14. https://www.snomed.org/
15. Linda Bird, 'The Essential Guide to SOMED CT', 2025, Springer Nature.
16. https://loinc.org/
17. https://loinc.org/kb/users-guide/
18. 'Strauss & Mayer's Emergency Department Management', Volume 1 & 2, 2021, ACEP.
19. Michael E. Porter, Elizabeth Olmsted Teisberg, 'Redefining Health Care: Creating Value-based Competition on Results', 2006, Harvard Business Review Press.
20. Dr. Subhas Talatam, 'Healthcare Finance in India', 2024, Crown Publishing.

21. Kristin L. Reiter, Paula H. Song, 'Gapenski's Healthcare Finance', 7th Edition, 2020, AUPHA/HAP.
22. Theron Mavrick, 'Medical System Basics Patient Care and Clinical Workflows', 2026, Independently Published.
21. https://www.ihacpa.gov.au/resources/ar-drg-version-110

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or a combination of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination, duration 3 hours

SEMESTER- VIII
(4 Year UG Degree- Honours with Research)

MAJOR COURSE-18

Course Name: Drugs Policy and Management in Hospitals
Course Code: BBAHMMJ801

Course Type: MAJOR	Course Details: MJC-18			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	**0**	**70**

Course Objective:

- To understand the role of drug policy in the safe, effective, and rational use of medicines in hospitals
- To develop knowledge of drug classification, procurement, storage, and distribution systems
- To align hospital pharmacy practices with NABH and regulatory guidelines
- To equip students with skills in drug safety, inventory control, and medication error management
- To promote patient safety and quality care through efficient drug management systems

Course Objective:

CO1: Students can explain drug policy and hospital pharmacy systems. (Bloom's Level 2, Understanding)

CO2: Students can classify and distinguish drugs based on Classification and Regulation. (Bloom's Level 2 & 3, Understanding and Apply)

CO3: Students can apply procurement and inventory techniques in a hospital scenario. (Bloom's level 3, Apply)

CO4: Students can analyze medication safety and drug distribution system's importance. (Bloom's level 4, Analyze)

CO5: Students can evaluate drug management practices based on NABH standards. (Bloom's Level 5, Evaluate)

CO6: Students can help to design effective drug policies and safety strategies for hospitals. (Bloom's Level 6, Create)

Unit 1. Introduction: Meaning and scope of drug policy, objectives of drug policy in hospitals, role of pharmacy in healthcare delivery, organization of Hospital Pharmacy- inpatient vs outpatient; Essential Drug List (EDL) & National List of Essential Medicines (NLEM- India); Rationakl use of medicine; Biologic vs Biosimilars, Orphan Drug Policy.

Unit 2. Classification and Types of Drugs:

Classification based on use- Antibiotic, Analgesic, Antipyretics, Antiseptics & Disinfectants, Vaccines, Emergency Drugs, Speciality Drugs.

Classification based on Regulations- Prescription drugs, Over-the-counter (OTC) drugs, Controlled/ Scheduled Drugs (Schedule H, H1, X- India).

Classification based on systems: Cardiovascular drugs, CNS drugs, Gastrointestinal Drugs, etc.

Classification of Medical Devices (CDSCO Framework): Class A, B, C, and D.

Unit 3. Drug procurement systems: centralized vs decentralized, vendor selection and rate contracts, Drug formulary management; Inventory control techniques- ABC analysis, VED analysis, EOQ (basic idea); Storage practices- Cold Chain Management, Expiry Management, LASA (Look-Alike Sound-Alike drugs); Automatic Dispensing Cabinets; Use of ASI in drug procurement and storage.

Unit 4. Drug distribution systems- Floor stock system. Unit dose dispensing, Barcode Medication Administration (BCMA), Closed-Loop Medication Administration (CLMA); Prescription handling; Medication administration process; Medication errors- types and causes; Adverse Drug Reaction (ADR), Pharmacovigilance in Hospital, Green Pharmacy.

Unit 5. NABH Guidelines- MMU standards, Safe Medication Practices, High-alert medications, Documentation and Audit requirements; Regulatory Frameworks- Pharmacy Act, Drugs and Cosmetics Act, Role of CDSCO; Quality Assurance- Drug Audits, Standard Operating Procedures (SOPs), Infection Control Linkage.

Unit 6. Hospital Drug Policy Formulation, Ethical Issues- Generic vs Branded Drugs, Over-prescription; Cost Containment Strategies; Antibiotic Stewardship Programme, Digital Pharmacy- e-prescription, Telemedicine, Hospital Information System Integration; Future Trends in Drug Management; Challenges from the Patient's point of view.

Suggested Readings:

1. G. Parthasarathi, Karin Nyfort-Hansen, 'A Textbook of Clinical Pharmacy Practice', 2020, Universities Press India Pvt. Ltd.

2. Abhinay Tiwari, Blessy Jacob, et al., 'Hospital and Clinical Pharmacy', 2025, IP Innovative Publication Pvt Ltd.

3. Dr. Bapuso V. Yadav & Dr. Adhikrao V. Yadav, 'Hospital & Clinical Pharmacy', 2023, Nirali Prakasan

4. Deepali Tomar et al., 'Textbook of Pharmacy Practice', 2023, Himalayan Publishing House.
5. Bhaskar Reddy K, 'Hospital Pharmacy Management and Functions', Lambert Academic Publishing.
6. NABH Latest Edition, https://nabh.co/
7. https://cdsco.gov.in/opencms/opencms/en/consumer/Essential-Medicines/
8. https://pharma-dept.gov.in/sites/default/files/NLEM.pdf

Teaching-Learning Process:

The teaching-learning process may be interactive classroom sessions with the help of PowerPoint presentations, reflective assessments, industry visits, workshops, and case study discussions to ensure active participation and continuous learning.

Assessment Methods:

Internal Examinations (30 marks): Internal assessment may be conducted by using any one or a combination of Class participation, Presentation, Project writing, Case studies, Assignments, and Surprise tests as suitable.
External Examination (70 Marks): End Semester Written Examination, duration 3 hours

RESEARCH PROJECT COURSE-1

Course Name: Research Methodology
Course Code: BBAHMRP801

Course Type: RP	Course Details: RPC-1			L-T-P: 4-0-0	
Credit: 4	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	**0**	**70**

RESEARCH PROJECT COURSE-2

Course Name: Research Project/ Dissertation
Course Code: BBAHMRP802

Course Type: RP	Course Details: RPC-2			L-T-P: 0-0-16	
Credit: 8	Full Marks: 200	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		120	**0**	**80**	**0**

MINOR COURSE-7

Course Name: Patient Care Management System
Course Code: BBAHMMN801

Course Type: MINOR	Course Details: MNC-7			L-T-P: 4-1-0	
Credit: 5	Full Marks: 100	CA Marks		ESE Marks	
		Practical	Theoretical	Practical	Theoretical
		0	**30**	**0**	**70**

Course Objective:

- To develop a comprehensive understanding of patient care delivery systems across the continuum of care
- To equip students with skills in care coordination, patient flow management, and clinical operations
- To introduce case-mix systems and clinical classification frameworks (DRG, ICD, SNOMED, etc.)
- To enable data-driven decision-making in patient care and hospital performance
- To integrate quality, safety, and digital health systems in patient care management

Course Outcome:

CO1: Students will be able to **explain and interpret patient care systems across the continuum of care and levels of healthcare delivery.** (Bloom's Level 2 & 3, Understand and Apply)

CO2: Students will be able to **apply patient flow management techniques and care coordination strategies to optimize hospital operations and patient-centric care delivery.** (Bloom's Levels 3 & 4, Apply and Analyze)

CO3: Students will be able to **analyze case-mix systems and clinical coding frameworks (DRG, ICD, SNOMED, etc.) for reimbursement, benchmarking, and financial decision-making.** (Bloom's Level 4, Analyze)

CO4: Students will be able to **evaluate healthcare quality, safety, and performance using clinical, process, efficiency, and patient-centered indicators.** (Bloom's level 5, Evaluate)

CO5: Students will be able to **analyze and manage advanced patient care pathways, including emergency triage, critical care transitions, and post-acute care systems.** (Bloom's Levels 4, 5- Analyze and Evaluate)

CO6: Students will be able to **design cost-effective, value-based patient care models using DRG costing, utilization review, and outcome-based healthcare frameworks.** (Bloom's Level 6, Create)

Unit 1. Concept of Patient Care Management- continuum of care- Preventive → Curative → Rehabilitative → Palliative; Levels of Care- Primary, Secondary, Tertiary, Quaternary; Patient flows in hospital- OPD, IPD, ICU, Discharge, Follow-ups; Care pathways and Clinical Protocols; Multidisciplinary care teams;

Unit 2. Patient Flow Management- Admission, Transfer, Discharge (ADT); bed Management and Capacity Planning, Queue Management in OPD, Emergency department patient flow optimization; Discharge planning & transition of care; Role of care manager; Patient- Centric Care.

Unit 3. Case-mix system- Diagnostic-Related Groups (DRG), Case Mix Index (CMI), Resource Utilization Grouping; Prospective Payment System, The Base Rate vs. The Modifier, Financial Modelling; MS-DRG and AR-DRG; Clinical Coding System- ICD-10/11, CPT (Procedure coding), SNOMED CT, LOINC; Applications- Reimbursement, Insurance Claims, Performance Benchmarking.

Unit 4. Quality, Safety, and Outcome Management- Donabedian Model- Clinical vs. Service quality integration; Outcome Indicator- Mortality rate, Readmission rate, ALOS, Surgical success rate, Infection rates (HAI, SSI, CLABSI, CAUTI);
Process Indicators- Time to treatment, Medication error rate, Compliance with clinical protocol, Surgical checklist adherence; Patient-Centered Indicators- Patient satisfaction score, Patient Complaints & Grievance rate, PROMs, PREMs; Efficiency Indicators- Bed occupancy rate, Bed turnover rate, OPD waiting time, ICU utilization, OT scheduling; Safety Indicators- Adverse events, Sentinel events, Falls and Pressure Ulcers, Medication safety incidents.

Unit 5. The Emergency Severity Index (ESI), Observation vs. Admission; Predictive Acuity- clinical early warning scores like MEWS (Modified Early Warning Score); Critical care to step-down- ICU → HDU → General Acute Ward; Post-Acute Care transition- Long Term Acute Care Hospitals (LTACH), Inpatient rehabilitation, Delayed Transfers of Care (DTOC);
Ambulatory & Day-care Surgery, Palliative vs. Hospice care; Behavioural and Psychiatric Holds; Patient flow management- Throughput Optimization, The ED Boarding Crisis, Discharge Before Noon (DBN) Initiative.

Unit 6. Cost of care per patient- resource allocation, Overuse vs. Underuse of services; DRG-based costing, Package-based care; Value-based healthcare- Concept Outcome/cost, measure value in patient care, bundled payment model, pay-for-performance system; Clinical utilization review, length of stay optimization, avoidable admission, cost-quality balance; Access vs. Affordability, Equity in patient care delivery.

Suggested Readings:

1. GD Mogli, 'Patient Care Relationship Coordinator', 2017, Jaypee Brothers Medical Publishers.
2. Seema Mehta, 'Managing Patient Centered Care: The Art of Finding and Keeping Loyal Patients', 2015, Jaypee Brothers Medical Publishers.
3. Girdhar J. Gyani, Alexander Thomas, 'Handbook of Healthcare Quality and Patient Safety', 3rd Edition, 2023, Jaypee Brothers Medical Publishers.
4. Leigh W. Cellucci et. al., 'Essentials of Healthcare Management: Cases, Concepts, and Skills', 2nd Edition, 2019, Academic Series.
5. Lawton Burns et. al., 'Shortell & Kaluzny's Health Care Management: Organization Design and Behaviour', 7th Edition, 2024, Cengage.
6. Corinne M. Karuppan et. al., 'Operations Management in Healthcare: Strategy and Practice', 2nd Edition, 2021, Springer Publishing Company.
7. Bohdan W. Oppenheim, 'Lean Healthcare System Engineering for Clinical Environments', 2021, Routledge.
8. Daniel B. McLaughlin et al., 'Healthcare Operations Management', 4th Edition, 2022, AUPHA/HAP.
9. Jan Vissers et. al., 'Operations Management for Healthcare', 2nd Edition, 2022, Taylor and Francis.
10. Patrice L. Soath, Kenneth A. Devane, 'Introduction to Healthcare Quality Management', 4th Edition, 2022, Gateway to Healthcare Management.
11. Reinhard Busse et. al., 'Diagnosis-Related Groups in Europe', 2011, Open University Press.
12. https://icd.who.int/en/
13. https://www.cms.gov/
14. https://www.snomed.org/
15. Linda Bird, 'The Essential Guide to SOMED CT', 2025, Springer Nature.
16. https://loinc.org/
17. https://loinc.org/kb/users-guide/
18. 'Strauss & Mayer's Emergency Department Management', Volume 1 & 2, 2021, ACEP.
19. Michael E. Porter, Elizabeth Olmsted Teisberg, 'Redefining Health Care: Creating Value-based Competition on Results', 2006, Harvard Business Review Press.
20. Dr. Subhas Talatam, 'Healthcare Finance in India', 2024, Crown Publishing.

21. Kristin L. Reiter, Paula H. Song, 'Gapenski's Healthcare Finance', 7th Edition, 2020, AUPHA/HAP.
22. Theron Mavrick, 'Medical System Basics Patient Care and Clinical Workflows', 2026, Independently Published.
21. https://www.ihacpa.gov.au/resources/ar-drg-version-110

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