



Dr. N.G.P. ARTS AND SCIENCE COLLEGE

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A++' Grade (3rd Cycle-3.64 CGPA)
Dr. N.G.P. - Kalapatti Road, Coimbatore-641048, Tamil Nadu, India
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Regulations 2026-27 for Post Graduate Programme (Outcome Based Education model with Choice Based Credit System)

M.Sc., Hospital Administration

(For the students admitted during the academic year 2026-27 and onwards)

Programme : M.Sc., Hospital Administration

Eligibility

Candidates for admission to the first year of the M.Sc., Hospital Administration full time degree course shall be required to possess a pass in "Bachelor's Degree" of any University and as per the norms set by the Government of Tamil Nadu or an Examination accepted as equivalent hereto by the Academic Council, subject to such conditions as may be described there to are permitted to appear and qualify for the M.Sc., Hospital Administration Post Graduate Degree Examination of this College after a course of study of two academic years.

Programme Educational Objectives

The Curriculum is designed to attain the following learning goals which students shall accomplish by the time of their graduation:

1. To learn efficient methods of Hospital Administration
2. To understand the concepts of management with relation to modern hospitals
3. To prepare and train qualified and efficient administrators to manage hospitals
4. To offer platform for working professionals in hospitals to achieve desired knowledge, skills and attitude in the field of hospital administration

M.Sc. (HA) (Students admitted during the A.Y. 2026-27)

PROGRAMME OUTCOMES:

On the successful completion of the program, the following are the expected outcomes.

PO Number	PO Statement
P01	To understand the major concepts in the functional areas of accounting, marketing, finance, information technology, and management with relation to hospitals.
P02	To build skills in the use of managerial tools of planning, organizing, and achieve optimal resource utilization in hospital settings.
P03	Use oral and written communication skills to meet the needs of various audiences.
P04	Use team and organizational skills, supervision, and coaching techniques to effectively lead across organization, department, and work group units to meet diverse stakeholder and organizational goals in a variety of healthcare environments.
P05	Develop innovative solutions to strategic, tactical and operational issues in managing healthcare systems and associated information technology through the combined use of information, data analytics, organizational knowledge, talent management, and critical and design thinking.

M.Sc. HOSPITALADMINISTRATION

Credit Distribution

Subjects	No. of Papers	Credit	Semester No.
Core	14	56	I to III
Elective	3	$3 \times 4 = 12$	I to III
EDC	1	$1 \times 3 = 3$	III
Computer practical	1	$1 \times 2 = 2$	I
Hospital Internship	3	$3 \times 3 = 9$	I to III
Hospital Training	1	$1 \times 2 = 2$	III
Project work	1	$1 \times 8 = 8$	IV
Total	24	92	

PG CURRICULUM

M.Sc. HOSPITAL ADMINISTRATION
AY 26-27

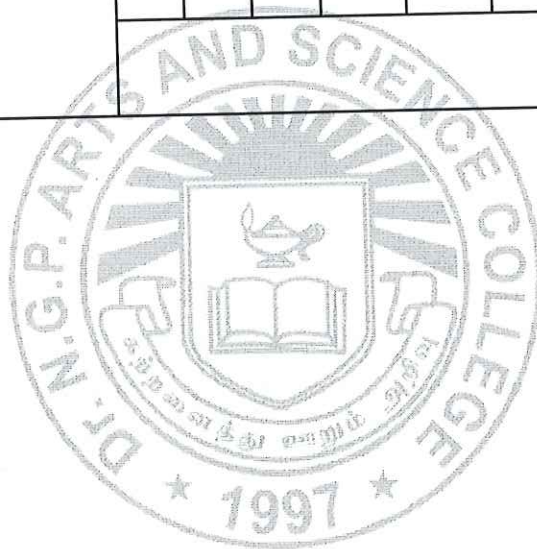
Course Code	Course Category	Course Name	L	T	P	Duration		Exam (h)	Max Marks			Credits
						Week	Total		CIA	ESE	Total	
First Semester												
26HAP1CA	Core I	Management and Organisational Behaviour	4	1	-	5	60	3	25	75	100	4
26HAP1CB	Core II	Concept of Health and Medical Terminology	4	-	-	4	48	3	25	75	100	4
26HAP1CC	Core III	Hospital Non- Clinical Operations Management	4	-	-	4	48	3	25	75	100	4
26HAP1CD	Core IV	Hospital Clinical Operations Management	4	-	-	4	48	3	25	75	100	4
26HAP1CE	Core V	Biostatistics and Operations Research	4	1	-	5	60	3	25	75	100	4
26HAP1CP	Core Practical	Spreadsheet Management	-	-	4	4	48	3	40	60	100	2
26HAP1CT	Internship	Hospital Internship- I	-	-	-	-	-	3	40	60	100	3
26HAP1DA	DSE - I	Total Quality Management Tools and Techniques	4	-	-	4	48	3	25	75	100	4
26HAP1DB		Entrepreneurship										
26HAP1DC		Digital Health and Healthcare Technology										
Total			24	2	4	30	360				800	29

M.Sc.(HA) (Students admitted during the A.Y.2026-27)

Course Code	Course Category	Course Name	L	T	P	Duration		Exam (h)	Max Marks			Credits
						Week	Total		CIA	ESE	Total	
Second Semester												
26HAP2CA	Core VI	Hospital Architecture and Planning	4	1	-	5	60	3	25	75	100	4
26HAP2CB	Core VII	Healthcare Economics and Insurance systems	4	-	-	4	48	3	25	75	100	4
26HAP2CC	Core VIII	Human Resource Management and Industrial Relations	4	1	-	5	60	3	25	75	100	4
26HAP2CD	Core IX	Materials Management	4	-	-	4	48	3	25	75	100	4
26HAP2CD	Core X	Healthcare Marketing and Strategic Management	4	1	-	5	60	3	25	75	100	4
26HAP2CT	Internship	Hospital Internship II	-	-	3	3	36	3	40	60	100	3
26HAP2DA	DSE - II	Application of Quality in Healthcare	4	-	-	4	48	3	25	75	100	4
26HAP2DB		Innovation in Entrepreneurship										
26HAP2DC		Healthcare Analytics										
Total			24	3	3	30	360				700	27

Course Code	Course Category	Course Name	L	T	P	Duration		Exam (h)	Max Marks			Credits
						Week	Total		CIA	ESE	Total	
Third Semester												
26HAP3CA	Core XI	Quality Assurance in Healthcare	4	1	-	5	60	3	25	75	100	4
26HAP3CB	Core XII	Healthcare Laws	4	-	-	4	48	3	25	75	100	4
26HAP3CC	Core XIII	Hospital Information System	4	-	-	4	48	3	25	75	100	4
26COP3EA	EDC	Financial and Management Accounting	4	1	-	5	60	3	25	75	100	3
26HAP3CD	Core XIV	Research Methods for Management	4	1	-	5	60	3	25	75	100	4
26HAP3CV	Internship	Hospital Internship III - Capstone Project	-	-	3	3	36	3	40	60	100	3
26HAP3DA	DSE - III	Quality Accreditations in Healthcare	4	-	-	4	48	3	25	75	100	4
26HAP3DB		Healthcare Entrepreneurship										
26HAP3DC		Data Visualization										
26HAP3CT	Internship	Hospital Training	-	-	-	-	-	3	40	60	100	2
Total			24	3	3	30	360	-	-	-	800	28

Course Code	Course Category	Course Name	L	T	P	Duration		Exam (h)	Max Marks			Credits
						Week	Total		CIA	ESE	Total	
Fourth Semester												
26HAP4CV	Project Work	Project and Viva-voce	-	-	16	-	-	3	80	120	200	8
Total			-	-	16	-	-	3	80	120	200	8
												92



DISCIPLINE SPECIFIC ELECTIVE

Students shall select the desired course of their choice in the listed elective course during Semesters I, II, III

Semester I (Elective I)

List of Elective Courses

S. No.	Course Code	Course Name
1	26HAP1DA	Total Quality Management Tools and Techniques
2	26HAP1DB	Entrepreneurship
3	26HAP1DC	Digital Health and Healthcare Technology

Semester II (Elective II)

List of Elective Courses

S. No.	Course Code	Course Name
1	26HAP2DA	Application of Quality in Healthcare
2	26HAP2DB	Innovation in Entrepreneurship
3	26HAP2DC	Healthcare Analytics

Semester III (Elective III)

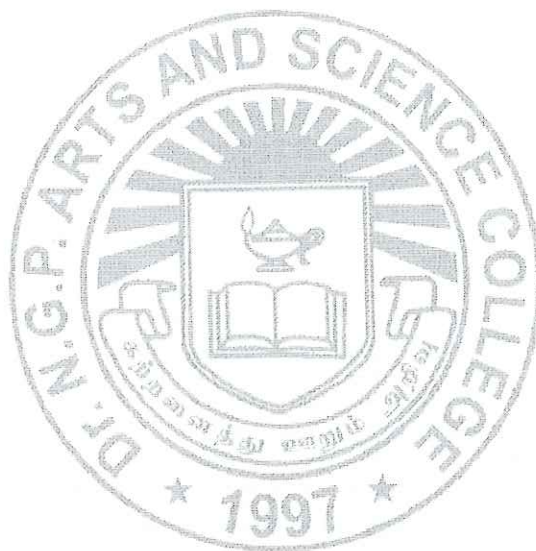
List of Elective Courses

S. No.	Course Code	Course Name
1	26HAP3DA	Quality Accreditations in Healthcare
2	26HAP3DB	Healthcare Entrepreneurship
3	26HAP3DC	Data Visualization

EXTRA CREDIT COURSES

The following are the courses offered under self study to earn extra credits:

S. No.	Course Code	Course Name
1	26HAPSSA	Medical Value Tourism
2	26HAPSSB	Ethical branding in Hospitals
3	26HAPSSC	Hospital Hazards Management



Semester - 1							
CORE I: MANAGEMENT AND ORGANISATIONAL BEHAVIOUR							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	26HAP1CA	MANAGEMENT AND ORGANISATIONAL BEHAVIOUR	CORE	60	-	-	4

Preamble	This course has been designed for students to learn and understand • a basic framework to apply management theories and organizational behavior techniques in various types of healthcare organizations • the interpersonal and communication skills to be an effective leader • conceptual and technical frameworks of leadership and the role of managers
Prerequisite	Knowledge about Organisation

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Understand fundamental concepts of management	K2
CO2	Apply organizational planning systems and Decision making in health care	K3
CO3	Analyze functions of management, evaluate and develop organizational skills in health care management	K5
CO4	Analyze the principles of organizational behaviour dimensions in healthcare management	K4
CO5	Assess the effectiveness of healthcare administration skills using concepts of organizational climate.	K6

Mapping with Program Outcomes:					
Cos/POs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	S	S	M
CO2	M	S	M	S	S
CO3	S	M	M	S	S
CO4	M	M	S	S	M
CO5	M	S	M	M	S

26HAP1CA	MANAGEMENT AND ORGANISATIONAL BEHAVIOUR
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Syllabus

Unit	Content	Hrs	Resources
I	Introduction to Management Evolution of Management science: Definition- nature-principle and process of management -Management as science or art – Management as profession – Managerial Roles –Management Theories : Classical- Behavioral- Modern theory - Industry 4.0 and beyond. Case study on Managerial Roles	12	Text Book 1
II	Planning and Organising Planning: Basics of planning- steps- types of plans – Strategic Management process- Organization: Meaning and definition - Organization structure - Delegation of authority-Decision making- Centralization – Decentralization Case study on Planning	12	Text Book 1
III	Directing and Controlling Staffing: Man power planning and resourcing - Direction: Principles- Motivation techniques - Hierarchy of needs theory – McClelland's theory – ERG theory – McGregor's Theory X and Theory Y - Control: process - control techniques Case study on Staffing and Motivation	12	Text Book 1
IV	Organisational Behaviour Definition- Key elements - Need - Scope of Organisational Behaviour - models – Personality-Perception – Learning and Behaviour - Group dynamics- Leadership – Leader Vs Manager- styles- Theories Case study on Teamwork, Perception, Personality and Leadership	12	Text Book 2
V	Organisational Dynamics Organisational Climate – Power and Politics- Conflict- Organisational change - Resistance to change- Management of change- Organisational development - Organisational Communication- Principles- Channels- Barriers. Case study on Organisational change management	12	Text Book 2
Total		60	

Note: Case Studies related to the above Topics to be discussed Examinated Externally. (Section D: Compulsory question for Case Studies)
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Text book	1.	Dinkar Pagare, 2018, "Principles of Management", Sixth Edition, Sultan Chand & Sons, New Delhi.
	2.	L.M. Prasad. Edition 2014. Organisational Behaviour. Sultan and Chand sons, Delhi. Reprinted 2004
Reference Books	1.	Govindarajan. M., 2019. "Principles of Management", Ninth Edition, PHI Publications, New Delhi.
	2.	Ramasamy.T. 2013. Principles of Management. Himalaya Publishing House, Mumbai.
	3.	Stephen.P. Robbins. 14th Edition. 2011. Organisational behaviour. PHI Publishers, New Delhi.
	4.	Mitra J.K, 2017, "Principles of Management", First Edition, Oxford University Press.

Journal and Magazines	Principles Of Management Academy of Management Journal (aom.org)
E-Resources and Website	Infosys Springboard: Digital Learning and Reskilling Programs Principles of Management Coursera

Learning Method	Chalk and Talk/ Assignment/Seminar/ Group Discussion/Case Study
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Focus of the Course	Skill Development/ Development	Employability/	Entrepreneurial
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Semester - I							
CORE II: CONCEPT OF HEALTH AND MEDICAL TERMINOLOGY							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	26HAP1CB	CONCEPT OF HEALTH AND MEDICAL TERMINOLOGY	CORE	48	-	-	4

Preamble	This course has been designed for students to learn and understand • The fundamental concepts of health, disease and epidemiology • The principles of infection control and patient safety in Hospitals • The basics of medical terminology and essential examination techniques.
Prerequisite	Knowledge on Health

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Analyze concepts of health, disease and epidemiological measures in public health situations.	K4
CO2	Describe the structure and functions of the human body and its major systems.	K3
CO3	Develop and apply appropriate use of medical terminology in clinical and administrative contexts	K6
CO4	Evaluate infection control practices and patient safety measures in hospital settings.	K5
CO5	Understand health planning, national policies, and major health programmes in India.	K3

Mapping with Program Outcomes:					
Cos/ POs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	M	M
CO2	S	M	M	M	M
CO3	M	S	M	S	S
CO4	M	S	M	M	M
CO5	S	S	M	M	S

26HAP1CB	CONCEPT OF HEALTH AND MEDICAL TERMINOLOGY
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Syllabus

Unit	Content	Hrs	Resources
I	Concepts of Health, Disease and Epidemiology Concept and dimensions of health - Determinants of health - Indicators of health - Concept of disease and classification - Natural history of disease - Levels of prevention and disease control - Basics of epidemiology and scope - Measures of disease frequency - Epidemic outbreak investigation Case Study on Managing a Seasonal Disease Surge	10	Text Book 2
II	Overview of Human Systems Human body organization - Blood and blood components - Cardiovascular system - Respiratory system - Digestive system - Basic Functions of Nervous system - Overview of Reproductive system - Skeletal System - Excretory System Case Study on Multi-System Complications	10	Reference Book 2
III	Medical Terminology Structure of medical terms - Prefix- Suffix - Root Words - Common medical abbreviations used in hospitals - Terminology related to major body systems - Diagnostic and Surgical terminology - Introduction to ICD and SNOMED CT Case Study on Terminology Errors in HIS	10	Text Book 1
IV	Infection Control and Patient Safety Overview of communicable and non-communicable diseases - Hospital-acquired infections- Chain of infection and modes of transmission -Asepsis and standard precautions- Infection control practices in hospitals - Immunization - Isolation procedures and barrier nursing - Disease prevention in hospital settings Case Study on Rise in Hospital-Acquired Infections	9	Reference Book 4
V	Health Planning, Policies and Programmes Objectives and Planning process of Health planning in India - Role of central and state agencies - National Health Policy - State Health Policies -National Population Policy - National Nutrition Policy - Health committees in India - Major committees and key recommendations- Major national health programmes - Role of International Health Agencies Case Study on Implementing Government Health Schemes	9	Reference Book 3
	Total	48	
	Note: Case Studies related to the above Topics to be discussed Externally. (Section D: Compulsory question for Case Studies)		

Text book	1.	Barbara A Gylys, Wedding, Mary Ellen, Medical Terminology Systems: A body Systems Approach, 8 th Edition, 2017, F A Davis Publishing, ISBN : 9780803658677.
	2.	K. Park, 2007. Preventive and Social Medicine, 19 th Edition. M/S Banarsidas , Bhanot Publishers
Reference Books	1.	Betsy J. Shiland , Medical Terminology & Anatomy for Coding, 2024, Elsevier Health Sciences, ISBN : 9780443111945 .
	2.	Ross and Wilson. 2006. Anatomy and Physiology in Health and illness, 19th edition. Churchill livingstore Elsevier
	3.	Jugal Kishore, National Health Programs of India : National Policies & Legislations Related to Health, 2014 , Century Publications , ISBN : 9788188132492, 8188132497.
	4.	F.Douglas Scutchfield, C.William Keck, 2009. Public Health Practice . Cengage Learning India Private Limited, New Delhi.

Journal and Magazines	<u>National Health Programmes Ministry of Health and Family Welfare</u>
E-Resources and Website	<u>Infosys Springboard: Responsibility of Health</u> <u>Human Anatomy and Medical Terminology Fundamentals</u> <u>Specialization Coursera</u>

Learning Method	Chalk and Talk/Assignment/Seminar/ Group Discussion/Case Study/ Flipped Classroom
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Focus of the Course	Skill Development/ Employability/ Entrepreneurial Development/ Innovations
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Semester – I							
CORE III: HOSPITAL NON- CLINICAL OPERATIONS MANAGEMENT							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	26HAP1CC	HOSPITAL NON-CLINICAL OPERATIONS MANAGEMENT	CORE	48	-	-	4

Preamble	This course has been designed for students to learn and understand - the concepts of hospital systems, structure, and evolving healthcare services. - various administrative, supportive, and utility services in hospital management. - effective strategies for crisis management, safety, and quality improvement in healthcare organizations.
Prerequisite	Basic knowledge about Hospitals

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Apply hospital system concepts in healthcare delivery.	K3
CO2	Analyze hospital administrative and support services.	K4
CO3	Evaluate hospital service performance and quality.	K5
CO4	Assess legal, safety, and compliance systems.	K5
CO5	Design hospital operations and crisis management strategies.	K6

Mapping with Program Outcomes:					
Cos / POs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	M	M
CO2	S	S	M	M	M
CO3	M	S	M	S	M
CO4	S	S	M	M	M
CO5	M	S	S	S	S

26HAP1CC	HOSPITAL NON- CLINICAL OPERATIONS MANAGEMENT
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Syllabus

Unit	Content	Hrs	Resources
I	Introduction to Healthcare System Meaning of hospital - Classification of Hospital - Functions of hospital - Modern Hospital - Digital and Smart Hospitals - Hospital Organization and Structure -Hospital administration as a career - Changing system of hospital services Case Study on Public Vs Private Hospital Management.	10	Text Book 1
II	Administrative Services Human resources - Marketing - Patient Relations - Medical Value Tourism - Finance - Information Technology - Purchase - Stores - Legal and Compliance cell Case study on patient rights in Hospitals	9	Reference Book 1
III	Supportive Services Front Office - Housekeeping - Infection control - Linen & Laundry - Transport - Security - Medical Records - Health Insurance - Biomedical waste management - Water and Waste water Treatment Systems Case study on Patient experiences in Front office	9	Text Book 1
IV	Utility Services Engineering - Civil, Electrical, Plumbing - Bio Medical Equipment Management - Medical Gas supply - HVAC System - Communication system - Facility management system Case Study on Hospital Power Failure and Backup Systems	10	Text Book 1
V	Crisis Management Disaster Management (Internal and External) - Fire safety - Disaster Risks - Mock drills - Safety - Hazard Management and Risk Assessment- Incident reporting system - Occupational safety for staff - Hospital Safety Codes Case Study on Disaster Preparedness in Hospitals	10	Reference Book 1
Total		48	

Note: Case Studies related to the above Topics to be discussed Examinated Externally. (Section D: Compulsory question for Case Studies)
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Text book	1.	G.D.Kunders. 2010 Hospital and facilities planning and Design - Tata McGraw Hill Publishing Ltd, Delhi
	2.	RamaswamyT, 2019,"Principles of Management",Eleventh Edition, Himalaya Publishing Home Pvt Ltd, Mumbai
Reference Books	1.	Goel S L & Kumar R. 2004. Hospital Core Services: Hospital Administration of the 21st Century. Deep Deep Publications Pvt Ltd: New Delhi
	2.	S.K. Joshi. Quality Management in Hospitals. Jaypee Brothers Medical Publishers (P) Ltd, 2014, Delhi
	3.	S.L. Goel. 2004. Healthcare Organization and structure. Deep and Deep Publications Pvt. Ltd, New Delhi
	4.	P.C. Tripathi & P.N. Reddy. 2025. Principles of Management, McGraw Hill Education, India.

Journal and Magazines	https://www.iihmr.edu.in/event/report-healthcare-operations-management
E-Resources and Website	https://www.scribd.com/document/262184850/Principles-of-Hospital-Management

Learning Method	Chalk and Talk/Assignment/Seminar/ Group Discussion/Case Study
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Focus of the Course	Skill Development /Entrepreneurial Development/Employability
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Semester – I							
CORE IV: HOSPITAL CLINICAL OPERATIONS MANAGEMENT							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	26HAP1CD	HOSPITAL CLINICAL OPERATIONS MANAGEMENT	CORE	48	-	-	4

Preamble	This course has been designed for students to learn and understand • The specialties, sub specialties of medical field and various healthcare services • The important clinical functions and its management in Hospitals • The Key Performance Indicators and its impact on the Hospitals
Prerequisite	Basic knowledge about Hospital services

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Understand and apply the concepts of hospital structure, patient flow, and coordination of services to ensure efficient hospital operations.	K3
CO2	Analyze the functioning and coordination of Diagnostic and Support Services to improve patient care and hospital efficiency.	K4
CO3	Analyze the management of Clinical Services to improve operational efficiency.	K4
CO4	Evaluate the functioning of Critical Support Services to ensure quality, compliance, and safe hospital operations.	K5
CO5	Design KPI-based performance measurement systems to support monitoring and effective decision-making.	K6

Mapping with Program Outcomes:					
Cos / POs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	M	M
CO2	S	S	M	S	S
CO3	S	S	M	S	S
CO4	M	S	M	S	M
CO5	M	S	S	M	S

26HAP1CD	HOSPITAL CLINICAL OPERATIONS MANAGEMENT
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Syllabus

Unit	Content	Hrs	Resources
I	Hospital Operations – Overview and Patient Flow Structure of Hospitals – Departments - Specialties and Service lines –OPD-IPD - Day care services – Functions - Workflow Coordination - Clinical and Support services Case Study on Streamlining Patient Flow	10	Reference Book 1
II	Diagnostic and Support Services Management Laboratory services - Blood bank – Radiology and Imaging – Pharmacy operations – Dietary and Nutrition services – Rehabilitation services Case Study on Optimizing Diagnostic and Support Services	9	Text Book 1
III	Core Clinical Services Operations Ambulatory care management – Ward management – Operation Theatre management – ICU management – Emergency and Trauma services - Nursing services Case Study on Improving Clinical Operations	10	Text Book 2
IV	Specialized and Critical Support Services CSSD -Dialysis Unit Management – Telemedicine – Nuclear medicine - Mortuary services – Hospital committees - Roles Case Study on Strengthening Support Services	9	Reference Book 3
V	Hospital Performance Indicators Concept and importance of KPIs in Hospital performance measurement - Key indicators – BOR –ALOS – BTR - CMI – Mortality Rates – Readmission Rate - Infection rates - Data sources of KPIs - Frequency of Reporting - Role of KPIs in Monitoring Case Study on Using KPIs to Improve Hospital Performance	10	Text Book 2
	Total	48	
	Note: Case Studies related to the above Topics to be discussed Externally. (Section D: Compulsory question for Case Studies)		

Text book	1.	Wallace J. Hopp, William S. Lovejoy, Hospital Operations: Principles of High Efficiency Health Care, 2012, Pearson, ISBN: 9780132908719.
	2.	Bryan P. Bergeron, Performance Management in Healthcare : From Key Performance Indicators to Balanced Scorecard , 2017 , Taylor & Francis Publishers, ISBN: 9781351591393, 1351591398
Reference Books	1.	James R. Langabeer (II), Jeffrey Helton , Health Care Operations Management : A systems perspective, 2016, Jones & Bartlett Learning, ISBN: 9781284050066, 1284050068.
	2.	B M Shakharkar, Principles of Hospital Administration and Planning, 2nd edition, 2009, Jaypee Brothers Medical Publishers (P) Ltd, New Delhi, ISBN 978-81-8448-632-2
	3.	David Edward Marcinko, Hope Rachel Hetic , Hospitals & Health Care Organizations : Management Strategies, Operational Techniques, Tools, Templates, and Case Studies, 2012, Taylor & Francis Publishers, ISBN: 9781466575813, 1466575816.
	4.	S.K. Joshi. Quality Management in Hospitals. Jaypee Brothers Medical Publishers (P) Ltd, 2014, Delhi

Journal and Magazines	<u>Healthcare KPIs and Quality Metrics</u>
E-Resources and Website	<u>Infosys Springboard Healthcare Operations Management</u> <u>Coursera Operations Management in Healthcare</u>

Learning Method	Chalk and Talk/ Assignment/Seminar/ Group Discussion/Case Study / Flipped Classroom
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Focus of the Course	Skill Development/ Employability/ Entrepreneurial Development/ Innovations
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Semester - I							
CORE V: BIOSTATISTICS AND OPERATIONS RESEARCH							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	26HAP1CE	BIOSTATISTICS AND OPERATIONS RESEARCH	CORE	48	-	-	4

Preamble	This course has been designed for students to learn and understand • various concepts of Probability Distributions • how to compare Means of variations of more than two populations using ANOVA • the models of Transportation, Assignment and Queueing theory.
Prerequisite	Knowledge on Statistics

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Demonstrate the concept of probability distribution.	K2
CO2	Compare the relation between Correlation and Regression.	K2
CO3	Apply chi-square test and Analysis of Variance	K3
CO4	Apply the concept of transportation and Assignment problem.	K4
CO5	Analyse the concept of project network scheduling.	K6

Mapping with Program Outcomes:					
Cos / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	S	S	M
CO2	M	M	S	M	M
CO3	M	M	S	M	M
CO4	S	M	S	M	M
CO5	S	M	M	S	M

26HAP1CE	BIOSTATISTICS AND OPERATIONS RESEARCH
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Syllabus

Unit	Content	Hrs	Resources
I	Probability Distributions Probability distribution – Observed theoretical distributions - Binomial distribution – Pascal’s Triangle – Multinomial Expression-Poisson distribution - Continuous probability distribution - Normal distribution - Standard Normal distribution -Measures of deviation from the Normal Distribution - Kurtosis.	10	Text Book 1
II	Correlation and Regression Introduction- Correlation – significance of correlation – Bivariate and Multivariate Distribution – Types of Correlation – positive and negative correlation – Linear and Non-linear Correlation- Simple partial and multiple correlation- Measure of correlation – Objectives of Regression analysis- Regression coefficients- Difference between regression analysis and correlation analysis- Coefficient of determination	10	Text Book 1
III	Chi – Square Test and Analysis of Variance Formula for Determination of Chi – Square - Alternative formula - Chi – Square Distribution - Characteristics of Chi – Square Distribution - Working Rule for Chi – Square Test - 2x2 Contingency table - Calculation of Probability value - Assumptions of ANOVA - Test of ANOVA - Computation of Analysis of Variance ANOVA	10	Text Book 1
IV	Transportation Problem Definition- To represent Transportation problem as Linear Programming Problem Transportation Algorithm- North West Corner Rule to obtain Initial Basic Feasible Solution – Inspection Method to obtain Initial Basic Feasible Solution - Vogel’s Approximation Methods to obtain Initial Basic Feasible Solution I	9	Text Book 2
V	Assignment Model and Queueing theory Assignment problems – Difference between transportation and Assignment Models -To represent Assignment problems and transportation problems - Hungarian Algorithm - Introduction – Elements or Parameters of Queueing System – Steady state Balance Equation- Kendall’s Notation for representing Queueing Models- Model 1: Single Server Model.	9	Text Book 2
Total		48	

Note: Theory 40% Problem 60%)

Text book	1.	Veer BalaRastogi., 2011,"Fundamentals of Bio-Statistics", 2nd Edition. Ane Books Pvt.Ltd, New Delhi.
	2.	Rajagopal.K, 2012,"Operations Research" , First Edition, PHI Learning Pvt Ltd., New Delhi i
Reference Books	1.	Annadurai, B., 2015, "A Text Book of Bio Statistics", 1st Edition, New Age International Pvt. Ltd, New Delhi
	2.	Prabhakaran, G.N., 2006, "BioStatistics", 1st Edition, Medical Publishers Pvt Ltd, New Delhi
	3.	KantiSwarup, Gupta. P. K. and Man Mohan., 2007," Operations Research", 5th Edition. S. Chand & Sons Education Publications, New Delhi
	4.	Hamdy A. Taha., 2014, "Operations Research: An Introduction" 9th Edition, Pearson Education Publishers Pvt Ltd, New Delhi.

Journal and Magazines	https://academic.oup.com/biostatistics
E-Resources and Website	<u>Infosys Springboard: Digital Learning and Reskilling Programs :</u> https://usiu-ke.libguides.com/c.php?g=942913&p=6796759 Coursera

Learning Method	Chalk and Talk/Assignment/Seminar/ Group Discussion/Case Study
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Focus of the Course	Skill Development/ Development/ Innovations	Employability/	Entrepreneurial
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Semester – I							
CORE PRACTICAL : SPREADSHEET MANAGEMENT							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	26HAP1CP	SPREADSHEET MANAGEMENT	CORE		-	48	2

S.No

List of Programs

- 1 Create a multi-sheet Excel workbook to manage patient records and generate automated billing using appropriate formulas.
- 2 Design an invoice system for a medical store to calculate totals and apply conditional logic for billing analysis.
- 3 Develop a patient billing system using lookup functions to retrieve patient details and compute total charges.
- 4 Create a worksheet to evaluate staff performance by assigning grades using logical functions.
- 5 Analyze patient data using functions such as COUNTIF and COUNTIFS to summarize data based on multiple conditions.
- 6 Apply filtering and sorting techniques to extract patient records based on disease, department, or admission type.
- 7 Perform advanced data analysis using Pivot Tables to generate department-wise and disease-wise summaries.
- 8 Conduct statistical analysis on healthcare data, including Mean, Standard Deviation, and Standard Error, with interpretation.
- 9 Analyze relationships in healthcare data using basic regression techniques to identify trends and patterns.
- 10 Create charts and visualizations to represent healthcare data effectively for decision-making.
- 11 Compute and analyze key hospital performance indicators (KPIs) such as readmission rate, mortality rate and bed turnover.
- 12 Prepare a comprehensive healthcare report using analysed data, including tables, charts, KPIs and clear interpretation for hospital management decision-making.

Text Books	1.	Wayne L. Winston, <i>Microsoft Excel Data Analysis and Business Modeling</i> , Microsoft Press, Latest Edition.
	2.	John Walkenbach, <i>Excel 2019 Bible</i> , Wiley Publishing, Latest Edition. .

Learning Method	Demonstration/ Hands on Experiments
Focus of the Course	Skill Development/ Employability

Semester – I							
DSE I: TOTAL QUALITY MANAGEMENT TOOLS AND TECHNIQUES							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	26HAP1DA	TOTAL QUALITY MANAGEMENT TOOLS AND TECHNIQUES	DSE	48	-	-	4

Preamble	This course has been designed for students to learn and understand - the Fundamentals of Total Quality Management in a Hospital - the various tools and techniques used in TQM - the importance of documentation and role of auditing in TQM.
Prerequisite	Basic knowledge about concept of Quality

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Understand the concept and origin of TQM	K3
CO2	Analyse various strategies of TQM (TEL, GLP, WITs, GMP)	K4
CO3	Evaluate the various role in continuous improvement in TQM	K5
CO4	Create and evaluate the various documentation on Quality Manual and Procedure	K6
CO5	Understand and analyse various Internal Auditing in ISO systems	K4

Mapping with Program Outcomes:					
Cos / POs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	S	M
CO2	M	S	S	M	S
CO3	M	S	M	S	S
CO4	M	M	S	S	S
CO5	S	S	M	M	S

26HAP1DA	TOTAL QUALITY MANAGEMENT TOOLS AND TECHNIQUES
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Syllabus

Unit	Content	Hrs	Resources
I	Introduction to TQM Concept of Quality in emerging scenario of TQM – Origin of TQM – Quality Gurus (Deming, Juran, Crosby, Taguchi) – Factors motivating introduction of TQM – Role of HRD in TQM – Role of Participatory culture in TQM – Importance of TQM Case study on roles of HRD in TQM	9	Text Book 2
II	Role of Quality in Employee Involvement TEI (Total Employee Involvement) Strategy in TQM – Role of TEI – small group activities in TQM – Role of Quality Circles and Work Improvement teams (WITs). Good Laboratory Practices (GLP) and Good Manufacturing Practices (GMP) Case study on Total Employee Involvement	10	Reference Book 1
III	Continuous Improvement in Quality Role of Continuous Improvement in TQM – Introduction to Benchmarking and Business process reengineering – Zero defects – Quality costs and Planket Burman method – Kaizen – JIT, SMED, CEDAC Case study on Benchmarking	10	Text Book 1
IV	Documentation Apex (Quality System) Manual / Procedure and Departmental manuals and work Instructions preparations- Policy amendment and documentation - Validation of Documents Case study on Non- Compliance in Documentation	9	Reference Book 2
V	Auditing Auditing – Audit team and responsibilities – Audit protocol – Types of Auditing – Internal Auditing – Second and Third-party auditing – Role of Online Auditing in ISO Systems – Patient satisfaction survey Case study on Audit Protocol	10	Text Book 1
	Total	48	
Note: Case Studies related to the above Topics to be discussed Externally. (Section D: Compulsory question for Case Studies)			

Text book	1.	Besterfield, D.H. et al., 2019. Total Quality Management. 5th ed. Pearson Education.
	2.	S.K.Joshi. 2009. Quality Management in Hospitals. Jaypee Brother Medical Publishers (P) Ltd, Delhi
Reference Books	1.	Quality Management in Health Care, Principles and Methods, Donald Lighter and Douglas C Fair, Jones and Bartlett Publishers, 2004
	2.	Dr. R. Kiran. 2016. Total Quality Management: Key Concepts and Case Studies. 1st edition. Butterworth-Heinemann
	3.	John S. Oakland. 2014. Total Quality Management and Operational Excellence, 4th edition. Routledge
	4.	Giardino, A. P., Riesenber, L. A., & Varkey, P. (2021). <i>Medical Quality Management: Theory and Practice</i> (3rd ed.). Springer

Journal and Magazines	https://www.emeraldgrouppublishing.com/journal/tqm?utm_source
E-Resources and Website	https://asq.org/quality-resources?utm_source

Learning Method	Chalk and Talk/Assignment/Seminar/ Group Discussion/Case Study
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Focus of the Course	Skill Development/ Employability/ Entrepreneurial Development/ Innovations
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Semester – I DSE I: ENTREPRENEURSHIP							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	26HAP1DB	ENTREPRENEURSHIP	DSE	48	-	-	4

Preamble	This course has been designed for students to learn and understand - the concept of Entrepreneurship - the methods to create and start ventures - the role of Institutional support to Entrepreneurship
Prerequisite	Basic knowledge about Business

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	understand the overview of Entrepreneurship	K3
CO2	Create ideas for venture planning and development	K6
CO3	evaluate feasibility for various business plan	K5
CO4	evaluate the financial aspects of new venture	K5
CO5	analyse the role of Institutional support to Entrepreneurship	K4

Mapping with Program Outcomes:					
Cos / POs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	S	M
CO2	S	M	M	S	S
CO3	S	S	S	S	S
CO4	M	M	S	S	S
CO5	S	S	S	M	S

26HAP1DB	ENTREPRENEURSHIP
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Syllabus

Unit	Content	Hrs	Resources
I	Introduction to Entrepreneurship Entrepreneurship- Concepts and Overview- Evolution of Entrepreneurship in India- Entrepreneurial Traits- Models of Entrepreneurship- Entrepreneur vs. Manager- Opportunities for Entrepreneurs- women entrepreneurship- rural entrepreneurship Case study on Entrepreneurial Traits	9	Text Book 2
II	Creating and Starting the Venture Entrepreneurial decision process- Sources of new Ideas- Methods of generating ideas- Problem solving- Venture planning and development process Case study on Entrepreneurial decision process	10	Reference Book 1
III	Business Plan Nature and scope of Business plan- Writing Business Plan- Evaluating Business plans- Implementing business plans- Market Feasibility- Technical Feasibility-Project Report Preparation- Launching formalities. Case study on Evaluating business plan	10	Text Book 1
IV	Financing and Managing the new venture Sources of capital-Financial viability and control- Marketing and sales controls - Joint ventures- Acquisitions- Mergers- Franchising- Public issues- Rights issues - Bonus issues and Stock splits. Case study on Marketing and sales control	9	Reference Book 2
V	Institutional support to Entrepreneurship Role of Directorate of Industries- District Industries Centers (DICs)- Industrial Development Corporation (IDC)- State Financial corporation (SFCs)- Commercial banks Small Scale Industries Development Corporations (SSIDCs)- Khadi and village Industries Commission (KVIC)- National Small Industries Corporation (NSIC)- Small Industries Development Bank of India (SIDBI) Case study on DIC registration and guidance	10	Text Book1
Total		48	

	Note: Case Studies related to the above Topics to be discussed Examinated Externally. (Section D: Compulsory question for Case Studies)
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Text book	1.	Robert D Hisrich, M P Peters, D A Shepherd. 2017. Entrepreneurship,, 10 edition, McGraw Hill.
	2.	Rajeev Roy. 2011 Entrepreneurship, 2 nd edition, Oxford Higher Education
Reference Books	1.	David H Holt, 2019, Entrepreneurship, New Venture Creation, Prentice Hall
	2.	Alexander Osterwalder & Yves Pigneur, 2010. Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers (The Strategyzer series), 1st edition), John Wiley and Sons
	3.	Robert D. Hisrich, Michael P. Peters, Dean A. Shepherd, 2018, "Entrepreneurship", 10th Edition, Tata McGraw Hill.
	4.	Bruce R. Barringer & R. Duane Ireland, 2024, <i>Entrepreneurship: Successfully Launching New Ventures</i> , 7th Edition, Pearson

Journal and Magazines	https://xime.org/jme/jme-home
E-Resources and Website	w.iare.ac.in/sites/default/files/lecture_notes/IARE_Entrepreneurial_Development_NOTES.pdf

Learning Method	Chalk and Talk/ Assignment/Seminar/ Group Discussion/Case Study
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Focus of the Course	Skill Development/ Employability/ Entrepreneurial Development/ Innovations
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Semester – I							
DSE I: DIGITAL HEALTH AND HEALTHCARE TECHNOLOGY							
Semester	Course Code	Course Name	Category	L	T	P	Credits
I	26HAP1DC	DIGITAL HEALTH AND HEALTHCARE TECHNOLOGY	DSE	48	-	-	4

Preamble	This course has been designed for students to learn and understand • The functionals of the digital office Automation Applications and Database Management System • Knowledge in IOT and Hospital Information System • The applications of Mobile Health Care Services.
Prerequisite	Knowledge on Computer Fundamentals

Course Outcomes (Cos)		
CO Number	Course Outcomes (COs) Statement	Bloom's Taxonomy Knowledge Level
CO1	Understand functionals of the digital Automation Applications.	K3
CO2	Obtain knowledge on database environment	K3
CO3	Know the functions of IOT in Health Care	K3
CO4	Learn the concepts of Hospital Information System.	K4
CO5	Analyse the various emerging technologies in Health Care.	K6

Mapping with Program Outcomes:					
Cos / POs	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	S	S
CO2	M	S	M	M	S
CO3	s	S	M	S	S
CO4	M	M	S	M	M
CO5	S	S	M	M	S

26HAP1DC	DIGITAL HEALTH AND HEALTHCARE TECHNOLOGY
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Syllabus

Unit	Content	Hrs	Resources
I	Introduction to Digital Office Digital Office Applications - Data Visualization - Dashboard - Health Informatics - Digital Documentation - Paperless Hospitals - Internet and Advanced Communication in Healthcare Case Study on Smart Digital Hospital Office.	10	Text Book 1
II	Database Systems and Electronic Health Records Database Concepts and Data Processing - Database Management System - Database Design - Electronic Health Records - Health Data Standards - Data Privacy and Security in Healthcare - Blockchain in Healthcare Data Security Case Study on EHR Implementation in Hospitals	10	Text Book 2
III	IoT, Wearables and Smart Healthcare Internet of Things (IoT) in Healthcare - IoT Architecture and Devices - Wearable Health Devices - Remote Patient Monitoring Systems - Smart ICU and Connected Hospitals - Telehealth and Telemedicine Technologies Case Study on IoT in Telemedicine	10	Reference Book 1
IV	Hospital Information Systems and Digital Transformation Hospital Information System (HIS) - Structure - Modules - Clinical Decision Support Systems (CDSS) - Inventory Management Systems - Role of Big Data and Analytics in Hospitals - Artificial Intelligence in Healthcare - Networking and Cloud Computing in Hospitals Case Study: Digital Hospital Workflow	9	Reference Book 2
V	Mobile Health, Digital Health Ecosystem and Emerging Technologies Mobile Health (mHealth) Applications - Telemedicine Platforms and Virtual Care - Digital Health Ecosystem in India - Health Insurance Portals and Digital Claims Processing - Digital Therapeutics (DTx) - AI Chatbots and Virtual Health Assistants - AR/VR in Medical Training and Treatment Case Study on Mobile Health Units / Digital Health Initiative	9	Reference Book 4
Total		48	

Note: Case Studies related to the above Topics to be discussed Externally. (Section D: Compulsory question for Case Studies)

Text book	1.	Andra Cable, Steven M. Freund, Ellen Monk, Susan L. Sebok, Joy L. Starks, and Misty E. Vermaat, 2019 "Microsoft Office 365 and Office (2019) Introductory.
	2.	ElmasriRamez and NavatheShamkant.B,2017, "Fundamentals of Database Systems", (7th Edn.), Addison Wesley
Reference Books	1.	ArshdeepBahga, Vijay Madiseti, 2015," Internet of Things" – A hands-on approach Universities Press.
	2.	Kelkar, S. A., 2014, Hospital Information Systems: A Concise Study, Prentice Hall India, New Delhi.
	3.	Joydeep Das Gupta, 2015, "Hospital Administration and Management", Jaypee Brothers Medical Publishers.
	4.	Robert Istepanian, Swamy Laxminarayan, (2010),"M-Health: Emerging Mobile Health Systems", Springer

Journal and Magazines	https://www.inderscience.com/jhome.php?jcode=ijhtm
E-Resources and Website	https://www.javatpoint.com/iot-healthcareHealth(who.int)

Learning Method	Chalk and Talk/Assignment/Seminar/ Group Discussion/Case Study
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Focus of the Course	Skill Development/ Employability/ Innovations
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Jma.V

BoS Chairman/HoD
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Dr.N.G.P. Arts and Science		
APPROVED		
BoS- 21 st 1.4.26	AC -	GB -

M.Sc. (HA) (Students admitted during the A.Y.2026-27)