M. A. Hospital Administration

Syllabus

AFFILIATED COLLEGES

Program Code: ***

2021 – 2022 onwards

BHARATHIAR UNIVERSITY

(A State University, Accredited with "A" Grade by NAAC,
Ranked 13th among Indian Universities by MHRD-NIRF,
World Ranking : Times - 801-1000, Shanghai - 901-1000, URAP - 1047)

Coimbatore - 641 046, Tamil Nadu, India

Program Educational Objectives (PEOs)	
The M.A.(Hospital Administration) program describes that graduates are expected to attain within five to seven years after graduation	
PEO1	To learn efficient methods of Hospital Administration
PEO2	To understand the concepts of management relevant to modern hospitals
PEO3	To prepare and train qualified and efficient administrators to manage hospitals
PEO4	To apply the principles of management when provided Quality patient Care in selected areas of Clinical Specialty in the Hospital and Community
PEO5	To achieve desired knowledge, skills and attitude in the field of hospital administration and enhance culture of professionalism in their approach.
PEO6	To improve the ability of hospital based professionals in ethical decision making and implementation in key result areas of Hospital Administration.
PEO7	To build skills in the use of managerial tools of planning, organising, and achieve optimal resource utilisation in hospital settings.

Program Specific Outcomes (PSOs)	
After the successful completion of M.A.(Hospital Administration) program, the students are expected to obtain	
PSO1	**Punitive Knowledge:** Capable of demonstrating comprehensive knowledge and understanding of healthcare administration.
PSO2	**Communicational Skills:** Ability to read and write analytically, and present healthcare practices information in a clear and concise manner.
PSO3	**Critical Thinking:** Ability to critically evaluate healthcare administrative practices, policies and theories by following scientific approach to knowledge development.
PSO4	**Problem Solving:** Ability to apply healthcare administration concepts with real-life situations for wellbeing of the society.
PSO5	**Humanistic and Relationship Approach:** Ability to emphatically understand healthcare administration and provide patient care with resilience.
PSO6	**Professionalism**: Ability to conscientiously and innovatively show leadership skills to meet healthcare administration needs of India.

Program Outcomes (POs)	
On successful completion of the M.A.(Hospital Administration) program the students are able	
PO1	To understand the major concepts in the functional areas of human resource, marketing and finance in hospital management.
PO2	To comprehend the major perceptions in the functional areas of information technology and management in relation to hospitals.
PO3	To build skills in the use of managerial tools of planning and organising in hospital management.
PO4	To demonstrate Problem Solving Skills and achieve optimal resource utilisation in hospital settings.
PO5	To utilize the oral and written communication skills to meet the needs of divergent audience.
PO6	To develop teamwork, organizational skills, supervision and work group units to meet diverse stakeholders in different healthcare environments.
PO7	To inculcate techniques of coaching for effective lead in hospital organization.
PO8	To generate innovative solutions for strategic, tactical and operational issues in managing healthcare systems.
PO9	To develop associated information technology through the combined use of information, data analytics, organizational knowledge, talent management and critical and design thinking.
PO10	To build abilities to face the practical issues in hospital management.

BHARATHIAR UNIVERSITY: COIMBATORE 641 046
M.A.(Hospital Administration) (CBCS Pattern)
(Affiliated Colleges)
*(For the students admitted during the academic year **2021 – 22** onwards)*

Course Code	Title of the Course	Credits	Hours		Maximum Marks		
			Theory	Practical	CIA	ESE	Total
FIRST SEMESTER							
21PHM13A	Core-I : Management Principles	4	4		50	50	100
21PHM13B	Core-II : Concept of Health and Health Care Management	4	4		50	50	100
21PHM13C	Core-III : Organizational Behaviour	4	5		50	50	100
21PHM13D	Supportive-I: Biostatistics and Operations Research	4	5		50	50	100
21PHM13P	Core Practical -I : Computer Applications in Health Care Services	4		5	50	50	100
21PHM13T	Hospital Internship–I (Supportive Services)		3	Grade A to C			
	Elective – I	4	4		50	50	100
	Total	24	25	5			600
SECOND SEMESTER							
21PHM23A	Core-IV : Hospital Architecture, Planning, Design and Maintenance	4	4		50	50	100
21PHM23B	Core-V : Health Care Economics	4	4		50	50	100
21PHM23C	Core-VI : Health Care Marketing and Strategic Management	4	4		50	50	100
21PHM23D	Core- VII : Materials	4	4		50	50	100

	Management						
21PHM23E	Core- VIII : Legal and Ethical Issues in Health Care	4	4		50	50	100
21PHM23F	Supportive-II: Financial Management and Accounting	4	4		50	50	100
21PHM23T	Hospital Internship–II (Clinical Services)		3	Grade A to C			
	Elective – II	4	3		50	50	100
	Total	28	30				700
THIRD SEMESTER							
21PHM33A	Core-IX : Hospital Operations Management	4	5		50	50	100
21PHM33B	Core-X : Human Resource Management and Industrial Relations	4	4		50	50	100
21PHM33C	Supportive-III: Research Methodology	4	5		50	50	100
21PHM33D	Core-XI : Hospital Information System	4	4		50	50	100
21PHM33E	Core-XII : Quality Management in Health Care	4	5		50	50	100
21PHM33T	Hospital Internship–III (Minor Project)		3	Grade A to C			
21PHM33F	Hospital Orientation (30 days)	2	-		25	25	50
	Elective – III	4	4		50	50	100
	Total	26	30				650
FOURTH SEMESTER							
21PHM43V	Project Work	8	20		100	100	200
21PHM4EV	Elective Project	4	10		50	50	100
	Total	12	30				300

Grand Total	**90**						**2250**

ONLINE COURSES							
	Online Course	2					
		Non-scholastic with Credits					
VALUE ADDED COURSES							
	Medical Terminology & Procedures	2	30				50
	Disaster Management	2	30				50
JOB ORIENTED COURSES							
	Medical Records Management	2	30				50
	Quality Accreditations in Healthcare	2	30				50

ELECTIVE – I

(Student shall select anyone of the following course as Elective-I in First semester)

S. No.	Course Code	Name of the Course
1.	21PHM1EA	Hospital Record Standards and Policies
2.	21PHM1EB	Health Sector in India
3.	21PHM1EC	Fundamentals of TQM
4.	21PHM1ED	Introduction to Industry 4.0

ELECTIVE – II

(Student shall select anyone of the following course as Elective-II in Second semester)

S. No.	Course Code	Name of the Course
1.	21PHM2EA	Organization and Management of Hospital Records Department
2.	21PHM2EB	Organization and Administration of Health System
3.	21PHM2EC	TQM Tools and Techniques
4.	21PHM2ED	Big Data Analytics

ELECTIVE – III

(Student shall select anyone of the following course as Elective-III in Third semester)

S.No	Course Code	Name of the Course
1.	21PHM3EA	International Classification of Diseases
2.	21PHM3EB	Health Care Delivery System
3.	21PHM3EC	Total Quality Management in Hospitals
4.	21PHM3ED	Data Analytics using R

FOR PROGRAMME COMPLETION
Students have to complete the following subject: oblige

1. All the Core papers in I, II, III and IV semester.
2. All the Supportive papers in I, II and III semester.
3. One Elective Course in I, II, and III semester.
4. A project and Elective project in the IV semester.
5. Hospital Internship 45 Hours in I, II and III Semester and evaluation of the report will be done by the internal and external examiners. Based on their performance Grade will be awarded as follows:
   A: 75 Marks and above
   B: 60-74 Marks
   C: 50-59 Marks
   Below 50 Marks - (Reappear)
6. Hospital Orientation 30 days during II Semester summer holidays and Evaluation will be done in Third semester by internal and external examiners.
7. Project work and Elective project in IV Semester will be evaluated by the internal and external examiners.

TOTAL CREDIT DISTRIBUTION

Course	Credits	Total		Credits	Cumulative Total
Core	4	12X100 =	1200	48	72
Supportive	4	3X100 =	300	12	
Elective	4	3X100 =	300	12	
Project Work	8	1X200 =	200	8	8
Elective Project	4	1X100 =	100	4	4
Hospital Orientation	2	1X50 =	50	2	2
Computer Practical	4	1X100 =	100	4	4
Total			**2250**	**90**	**90**

EARNING EXTRA CREDITS IS NOT MANDATORY FOR PROGRAMME COMPLETION

EXTRA CREDITS

S. No.	Course	Credit	Total Credits
1.	Publication with ISSN Journal	1	1
2.	Hindi /Other Foreign language	1	1
3.	Paper Presented in Sponsored National/ International Seminar/Conference/ Workshop	1	1
4.	Online Courses Prescribed by the Department / Self Study paper	2	2
5.	Representation – Academic/Sports /Social Activities/ Extra Curricular Activities at University/ District/ State/ National/ International	1	1
6.	Value Added Course	2	2
7.	Job Oriented Course	2	2
Total			**10**

Rules:

The students can earn extra credits only if they complete the above during the programme period **(I to III semester)** and based on the following criteria. Proof of Completion must be submitted in the office of the Controller of Examinations before the commencement of the IV Semester. **(Earning Extra credits are not mandatory for programme completion).**

1. Publication with ISSN Journal by student and co-authored by staff member will be given one credit extra.

2. Student can opt Hindi/ French/ Other foreign Language approved by certified Institutions to earn one credit. The certificate (Hindi) must be obtained from Dakshina Bharat Hindi Prachar Sabha and He/ she has to enroll and complete during their programme period (First to Third semester).

3. Award winners in Paper Presentation in Sponsored National/International Seminar/Conference/ Participation in short term workshop (minimum 5 days) will be given one credit extra.

4. Student can earn two credit, if they complete any one minimum 4 weeks Online certification courses (MOOC/SWAYAM/NPTEL/COURSEERA) / Self study paper prescribed by the concerned department.

Self study paper offered by the Hospital Administration Department

S. No.	Semester	Course Code	Course Title
1.	I Semester to III Semester	21PHMSS1	Hospital Hazards Management
2.		21PHMSS2	Brand Management
3.		21PHMSS3	Customer Relationship Management

5. Award Winners in Social Activities/ Extra Curricular /Co-Curricular Activities / Representation in Sports at University/ District/ State/ National/ International level can earn one credit extra.

6. Student can earn two credits, if they complete the Value Added Course - Medical Terminology & Procedures (or) Disaster Management (30 hours).

7. Student can earn two credits, if they complete the Job Oriented Course - Medical Records Management (or) Quality Accreditations in Healthcare (30 hours).

First Semester

Course code	21PHM13A	MANAGEMENT PRINCIPLES	L	T	P	C
Core/Elective/Supportive		Core – I	4	-	-	4
Prerequisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:

1. Provide a basic framework of understanding and applying management concepts in Health Care Organizations.
2. Analyze, evaluate, and solve problems using the methods of management science at various types of Health Care Sectors.
3. Use the interpersonal & communication skills as an effective technique which a leader needs to make correct decisions and to act within social and ethical dimensions.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Outline the historical developments, fundamental concepts, emerging trends and developments in Management	K2
2	Develop the tools of planning and decision making in health care management	K3
3	Categorize and classify the organizational skills that fit to the health care organization	K4
4	Appraise and interpret the elements of directing and motivating in health care management	K5
5	Compile and propose controlling techniques for health care organization	K6

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Evolution and Process of Management	9 hours

Evolution of Management Science: Definition, Nature, Principle and Process of Management - Management as Science or an Art – Management as a Process –The Managerial Roles – Management Theories.

Unit:2	Planning and Decision Making	10 hours

Planning: Meaning, Definition and Features – Pervasive Nature of Planning – Process, Importance, Techniques of Planning – Characteristics of Good Plan – Objectives – Management By Objectives – MBE Strategic Planning. Policy-Procedure, Methods and Rules -Types of Policy - Decision Making - Types of Decisions - Common Problems and Difficulties in Decision Making - Decision Support System (DSS) – Models – Forecasting - Types and Elements – Limitations.

Unit:3	Organizing	9 hours

Organizing: Nature, Purpose and Importance - Elements of Organizing – Formal and Informal Organization – Limitations of Informal Organization - Forms of Organization – Delegation - Principles, Tasks And Needs - Barriers of Effective Delegation – Process of Delegation - Guidelines For Effective Delegation.

Unit:4	Directing, Leadership and Motivation	9 hours

Directing: Behavioural Models – Creativity – Leadership – Traits of Leader - Importance of Leadership – Functions of Leader – Distinction Between Leadership and Manager - Trait Theory – Leadership Theory – Power Styles - Motivation – Motivation Techniques - Job Enrichment – Hierarchy of Needs Theory – McClelland's Theory – ERG Theory – Equity Theory-

Reinforcement Theory.		
Unit:5	**Controlling**	**9 hours**
Controlling – Control System and Processes – Characteristics of Control – Limitations of Control - Control Techniques - Budget Controlling Methods- Gantt Chart – PERT/CPM – Flow Chart, Flow Process Charts, Work Distribution Charts.		
Unit:6	**Contemporary Issues**	**2 hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**48 hours**

Text Book(s)	
1	*Ramasamy.T*, 2018. **Principles of Management**. Himalaya Publishing House, Mumbai. 8th Edition
2	*R.C.Bhatia, 2013.***Principles of Management**. Jain Book Agency, New Delhi.
Reference Books	
1	L.M. Prasad, 2019. **Principles & Practices of Management** ,Sultanchand & Sons, New Delhi
2	*Dinkar Pagare*, 2014. **Business Management**. Sultan Chand and Sons, New Delhi.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	*Principles of Management from* Indian Institute of Technology, Kharagpur
2	*Managing Services from* Indian Institute of Technology Kanpur
3	Organizational Design: Creating Competitive Advantage from *Indian Institute of Management Bangalore*
Course Designed By: Mrs.V.Prabavathi	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	M	M	S	S	S	S	S
CO2	S	S	S	S	S	S	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM13B	CONCEPT OF HEALTH AND HEALTH CARE MANAGEMENT	L	T	P	C
Core/Elective/Supportive		Core – II	4	-	-	4
Prerequisite			Syllabus Version		First	

Course Objectives:

The main objectives of this course are to:

1. Make the students understand implications of personal and societal behaviour on disease and disease prevention and demonstrate their understanding of health principles

2. Understand the broad view of epidemiological principles of disease and understand various health awareness programs and actively participate in health decisions.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understand about concept of health and compare different types of diseases, causation and demonstrate knowledge on concept of disease prevention.	K4
2	Understand and demonstrate the knowledge on basic anatomy, physiology and different functions of human body.	K4
3	Understand and analyse various epidemiological principles and strategic models in conducting field studies.	K4
4	Distinguish and compare various health level of India health care system and analyse the various health policies	K5
5	Understand and assess various health programs in India and criticize their current progress on public health.	K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Concept of Health and Diseases	8 hours

Concept of Health - Definition and Dimensions of Health - Health Development - Health in Developed and Developing Regions - Spectrum of Health - Determinants of Health - Indicators of Health - Concept of Disease - Concepts of Disease Causation - ICEBERG PHENOMENON of Disease - Natural History of Disease - Concept of Disease Control - Concept of Prevention - Disease Classification.

Unit:2	Basic Anatomy and Physiology & Human System	8 hours

Introduction -The Cell - The Tissues - Organs and Systems - Skeletal System - Joint of the Skeleton – Blood – Blood Components – Human System -Cardiovascular System – Urinary System – Respiratory System – Digestive System – Central Nervous System – Reproductive System.

Unit:3	Epidemiology and Infection Control	8 hours

Definition and Basic Concepts of Epidemiology - Basic Measurement - Mortality and Morbidity - Methods of Epidemiology - Infectious Disease Epidemiology - Investigation of an Epidemic Outbreak - Nosocomial Infection-Asepsis - Reservoir, Carrier and Mode of Transmission of Communicable Diseases .

Infection Control Measures - Host Defence - Immune Response - Immunization Agents - Hazards of Immunization - Disease Prevention and Control-Non Communicable Disease - Barrier Nursing-Isolation.

Unit:4	**Health Administration & Health Policies In India**	**10 hours**
Introduction – Health Administration at Center - Health Administration in State –District Health Administration - Health Administration in Rural Areas – Village Level Health Workers – Voluntary Health Agencies - Health Planning in India – National Health Policy – National Housing Policy – National Nutritional Policy – National Population Policy - National Health Policy- National Rural Health Mission-National Urban Health Mission.-MCI ACT.		
Unit:5	**National and International Health Programs**	**12 hours**
Indian Health Policy - National Family Welfare Programs – Universal Immunization Programs – Reproductive and Child Health Programs– Revised National Tuberculosis Control Programs - National Tuberculosis Elimination Programs – National Leprosy Eradication Programs – National AIDS Control Programs–National Program For Control of Blindness - National Program for Prevention and Control of Cancer Diabetes, Cardiovascular Disease and Stroke – National Mental Health Programs - SWATCH BHARAT- Rashtriya Swasthya Bima Yojana - POSCO Act - International Health Programs - Rock Feller Foundation- Ford Foundation – World Bank Programs.		
Unit:6	**Contemporary Issues**	**2 hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**48 hours**

Text Book(s)

1	*K. Park*, 2019. **Preventive and Social Medicine**. Banarsidas Bhanot Publishers, 25th Edition.(UNIT I , III and V).
2	*N.Murugesh*, **Basic Anatomy and Physiology**. Sathya Publishers, Madurai 6th Edition. (UNIT II)
3.	*Dr. B. Sridhar Rao*, 2015. **Principles of Community Medicine**. AITBS Publishers, New Delhi. 6th Edition. (UNIT IV).

Reference Books

1	*Ross and Wilson*, **Anatomy and Physiology in Health and illness**. Churchill Livingstone Elsevier.
2	*S.L. Goel*, **Healthcare Organization and structure**. Deep and Deep Publications Pvt. Ltd, New Delhi.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	Human health -- Health and human development by HARVARD PUBLIC HEALTH. https://alison.com/courses/human-health-health-and-human-development/content
2	Economics Of Health And Health Care by Prof. Angan Sengupta Indian institute of technology (IIT kanpur) https://nptel.ac.in/courses/110104095

Course Designed By: Mr. B Bheemaraj

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	M	M	M	M	M	S	S	S
CO2	M	M	M	M	M	M	M	S	S	S
CO3	M	M	M	M	M	M	M	S	S	S
CO4	S	S	S	S	M	S	S	S	S	S
CO5	S	S	S	S	M	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM13C	ORGANIZATIONAL BEHAVIOUR	L	T	P	C
Core/Elective/Supportive		Core – III	5	-	-	4
Prerequisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:

1. Study and apply organizational behaviour concepts, process, challenges, dimensions and principles in healthcare management.
2. Learn about group dynamics, organizational structure, organizational climate and quality of work life in healthcare organization.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Build knowledge on healthcare organizational behaviour concepts, evolution, process, challenges and principles in healthcare management.	K3
2	Analyze and apply the principles of organizational behaviour concerned with personal behavioural dimensions in health care in management prospects.	K4
3	Classify and apply group dynamics among the healthcare organisational hierarchy personnel	K4
4	Explain and determine knowledge under concepts of organizational structure, organizational climate and quality of work life in healthcare organization.	K5
5	Asses and apply overall effectiveness of healthcare organisational administration skills using concepts of change and development	K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Introduction to Organisational Behaviour	12 hours

Definition – Key Elements – Nature and Scope – Need for Organisational Behaviour – Types of Management – Challenges Faced by Management – Organisational Process – Models – Evolution of Organisational Behaviour Development of Organisational Behaviour.

Unit:2	Individual Dimensions of Organisational Behaviour	12 hours

Nature of Human Behaviour – Personality – Perception – Learning and Behaviour Modification – Attitudes and Values

Unit:3	Group Dynamics	12 hours

Foundations of Group Behaviour – Organisational Conflicts – Job Frustration – Stress Management – Communication – Conflict Management – Power and Politics

Unit:4	Dynamics of Organisation	11 hours

Introduction to Organisation – Organisational Structure – Organisational Theory – Organisational Culture – Organisational Change & Development – Transactional Analysis- Quality of Work Life

Unit:5	Organisational Effectiveness and Organisational Change	11 hours

Organisational Effectiveness: Concept – Approach – Maximisation – Managerial Effectiveness – Factors .Organisational Change: Nature – Factors – Process – Responses to Change – Resistance to Change – Over Coming Resistance to Change – Change Agents – Organisational Growth & Change – Organisational Development.

Unit:6	**Contemporary Issues**	**2 hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**60 hours**

Text Book(s)

1	*L.M.Prasad*, 2019. **Organisational Behaviour**. Sultan and Chand sons, Delhi. Reprinted .
2	*S.S.Khanka*, 2017. **Organisational Behaviour**, S.Chand and Company Ltd,New Delhi.

Reference Books

1	*Stephen.P.Robbins*, 2018. **Organisational Behaviour**. PHI Publishers, New Delhi. 18th Edition.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	Organizational behaviour from CEC
2	www.managementstudyguide.com

Course Designed By: Dr.M.Viswanathan

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	M	S	S	S	S	S
CO2	S	M	S	S	M	S	S	S	S	S
CO3	S	M	S	S	M	S	S	S	S	S
CO4	S	M	S	S	M	S	S	S	S	S
CO5	S	M	S	S	M	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM13D	BIOSTATISTICS AND OPERATIONS RESEARCH	L	T	P	C
Core/Elective/Supportive		Supportive – I	4	1	-	4
Prerequisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:

1. Explore the nature of data and the challenges involved in the process. It also covers the statistical approach for testing hypotheses and performing data analysis using strategic statistical tools for description and evaluating.

2. Interpret and evaluate statistical analyses for the result of experiments or observational studies.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understand the concepts of Central Tendency and Variation	K2
2	Apply the knowledge of Correlation and Regression in healthcare	K3
3	Understand the Probability concepts in healthcare	K5
4	Measure the various Distribution skills associated with healthcare operations research	K5
5	Evaluate and recommend the Operation Research Techniques in Healthcare environment	K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Introduction to Statistics and Applications	12 hours

Arithmetic Mean – Median - Mode Position Average - Geometric Mean -Harmonic Mean - Selection of Appropriate Measures of Central Tendency -Measures of Dispersions - Concept of Range - Mean Deviation - Inter Quartile Deviation Range - Variance and Standard Deviation - Coefficient of Variation and Method of Calculating Standard Deviation.

Unit:2	Correlation and Regression	12 hours

Introduction - Significance of Correlation- Types of Correlation – Methods of Scatter Diagram- Graphic Method - Coefficient of Correlation – Coefficient of Determination - Introduction to Regression – Uses - Regression Lines - Regression Equations – Standard Errors of Estimations - Limitations.

Unit:3	Probability	11 hours

Introduction - Types of Probability Approach – Importance – Calculations –Theorems - Mathematical Expectations - Counting Rules - Illustrations.

Unit:4	Measurement of Distributions	11 hours

Binomial Distribution - Poisson Distribution - Normal Distribution – Probability Distribution.

Unit:5	Operations Research	12 hours

Queuing Theory – Introduction – Features - Performance Measures - Number System -

Patient Scheduling - Patient Waiting - Resource Allocation.		
Unit:6	**Contemporary Issues**	**2 hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**60 hours**

Text Book(s)	
1	*J.K.Sharma*, 2016. **Operations Research : Theory and Applications**. Laxmi Publications Pvt Ltd,New Delhi, 6th Edition.
2	*S.P.Gupta*, 2017.**Statistical Methods**. Sultan Chand and Sons, New Delhi 44th Edition.
Reference Books	
1	*N.Gurumani*, 2015. **An introduction to Bio Statistics**. MJP Publishers, Chennai,2nd Revised Edition.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	Business Statistics from *Indian Institute of Technology Roorkee*
Course Designed By: Dr.S.Mohan	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	S	S	M	M	M	S	S	S
CO2	M	S	S	S	M	M	M	S	S	S
CO3	M	S	S	S	M	M	M	S	S	S
CO4	M	S	S	S	M	M	M	S	S	S
CO5	S	S	S	S	M	S	M	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM13P	COMPUTER APPLICATIONS IN HEALTH CARE SERVICES	L	T	P	C
Core/Elective/Supportive		Core Practical – I	-	-	5	4
Prerequisite		Relevant Software	Syllabus Version		First	

Course Objectives:

The main objectives of this course are at:

1. Provide detailed knowledge on Word, Excel & PowerPoint

2. Learn the fundamentals of computing devices in curriculum

WORD	20 Hours

Creating a New Document With Templates & Wizard - Creating Own Document - Opening/Modifying A Saved Document - Converting Files to and From Other Document Formats - Using Keyboard Short-Cuts & Mouse - Adding Symbols & Pictures to Documents - Headers and Footers - Finding and Replacing Text - Spell Check and Grammar Check - Formatting Text - Paragraph Formats - Adjusting Margins, Line Space - Character Space - Changing Font Type, Size - Bullets and Numbering - Tables - Adding, Editing, Deleting Tables - Working Within Tables - Adding, Deleting, Modifying Rows And Columns - Merging & Splitting Cells-Mail Merge – Macro Shortcut.

EXCEL	20 Hours

Working with Worksheets - Cells - Entering, Editing, Moving, Copying, Cutting, Pasting, Transforming Data - Inserting and Deleting of Cells, Rows & Columns – Working with Multiple Worksheets - Switching between Worksheets - Moving, Copying, Inserting & Deleting Worksheets - Using Formulas for Quick Calculations - Working & Entering a Formula - Formatting a Worksheet - Creating and Editing Charts - Elements of an EXCEL Chart - Selecting Data to a Chart - Types of Chart - Chart Wizard – Formatting Chart Elements - Editing a Chart - Printing Charts.

POWERPOINT	20 Hours

Creating New Presentations - Auto Content Wizard - Using Template – Blank Presentation - Opening Existing Presentations - Adding, Editing, Deleting, Copying, Hiding Slides - Presentations - Applying New Design - Adding Graphics - Using Headers and Footers - Animating Text - Special Effects to Create Transition Slides - Controlling the Transition Speed - Adding Sounds to Slides - Using action Buttons.

Total Practical Hours	60 Hours

Course Designed By : Mrs.R. Geetha

Second Semester

Course code	21PHM23A	HOSPITAL ARCHITECTURE, PLANNING, DESIGN AND MAINTENANCE	L	T	P	C
Core/Elective/Supportive		Core - IV	4		-	4
Prerequisite			Syllabus Version		First	

Course Objectives:

The main objectives of this course are to:

1. Impart skills on planning and operation of functional areas in hospitals.
2. Develop concepts and strategies for quality and economical hospital architectural projects.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Analyse the timely changing role of hospitals.	K4
2	Elaborate the concept of planning required in setup a hospital.	K6
3	Understand the various legal and other documents and drawing required for hospital project.	K6
4	Obtain effective hospital standards and design.	K6
5	Design models for various departments of hospitals.	K6

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Hospital as a System	10 hours

Definition of Hospital – History of Hospitals – Changing Role of Hospitals – Hospital as a System – Hospital & Community.

Unit:2	Planning	10 hours

Principles of Planning – Planning Team – Assessment of the Extent of Need for Hospital Service - Site Selection – Master Plan – Circulation Rules – Distances and Parking – Zonal Distribution – Space Requirement – Climatic Consideration – Functional Brief - Equipping a Hospital - Construction & Commissioning.

Unit:3	Structural Design	8 hours

Role of Architect – Working Drawing – Legal Formalities - The Hospital Site – Design Considerations - Environments Regulations - Equipment Planning - Bed Distribution - Space Requirements, Their Relationships - Construction Costs.

Unit:4	Legal Hospital Standards	10 hours

General Standards for Designing Hospital Facilities – Licensing and Documentation - General Standards for Details and Finishes – Mechanical Standards - Electrical Standards – Standard for Centralized Medical Gas System– Standards for Bio Medical Waste.

Unit:5	Planning Design of Essential Departments	8 hours

Planning and Designing Emergency Department – Surgical Suite – OT – CSSD– Food Service Department – Laundry- Laboratory – Blood Bank.

Unit:6	Contemporary Issues	2 hours

Expert Lectures, Online Seminars – Webinars

	Total Lecture hours	**48 hours**
Text Book(s)		
1	*B.M Shakharkar*, 2009. **Principles Hospital Administration and Planning**. Jaypee Brothers Medical Publishers (P) Ltd, New Delhi. 2nd Edition (UNIT I to III).	
2	*S.K.Joshi,* 2014. **Quality Management in Hospitals**. Jaypee Brothers Medical Publishers. 2nd Revised Edition (UNIT IV and V).	
Reference Books		
1	*S.K.Joshi.* 2014. **Quality Management in Hospitals**. Jaypee Brothers Medical Publishers, 2nd Revised Edition .	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	HOSPITAL PLANNING AND ADMINISTRATION UNIVERSITY OF NETHERLANDS. https://www.udemy.com/course/essentials-of-hospital-planning-and-administration/	
Course Designed By: Mr.B.Bheemaraj		

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	M	S	S	S	S	S
CO2	S	S	S	S	M	S	S	S	S	S
CO3	S	M	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM23B	HEALTH CARE ECONOMICS	L	T	P	C
Core/Elective/Supportive		Core – V	4	-	-	4
Pre-requisite			Syllabus Version		First	

Course Objectives:

The main objectives of this course are to

1. Provide knowledge on the dimensions of Economics, Demand and supply curves.
2. Explain the different types of Competitions in the market.
3. Obtain the role of economic systems in providing solution to economic problems and employment opportunities in Health Care Industries.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Apply knowledge on concepts of Demand and Production function.	K3
2	Examine the concepts of supply and different costs analysis.	K4
3	Analyze the different types of competitions in economic growth.	K4
4	Assess the knowledge on effective management of resources.	K5
5	Compare the economic problems in healthcare using various budgeting techniques.	K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit : 1	Concepts of Economics	9 hours

Characteristics – Dimensions of Economics, Economist Role and Responsibilities – Demand - Consumer Demand Utility- Law of Demand - Demand Curve - Indifference Curve - Elasticity of Demand- Determinants - Production – Process - Factors of Production - Isoquants - Production Function – Production Possibility Frontier in Health Care - Measures of Health Status.

Unit : 2	Pricing and Supply	9 hours

Concepts – Theory of Price Determination – Utility Analysis – Supply Curves – Cost Concepts and Cost Analysis.

Unit : 3	Market	9 hours

Kinds of Market Structures - Perfect and Pure Competition – Monopoly -Monopolistic Competition – Oligopoly- price discrimination - Types – National Income and Business Cycle – Concepts – Measures - Methods- Economic growth.

Unit : 4	Healthcare Service Market	9 hours

Principles of Primary Health Care – Services - Sources – Accesses- Healthcare Service Market - Economic Analysis - Medical Care Market Place - Market Failure in Medical Markets - Employment at Indian Health Service – Efficiency – School - Market Dynamics- Healthcare Industry- Segments- Conditions – Pharmaceutical Market.

Unit : 5	**Financial Economics**	**10 hours**
Economics of Size - Economics and Diseconomies of Scale - Input Output Analysis - Capital Budgeting – Pay Back Period Method – NPV – IRR – Monetary and Fiscal Policies.		
Unit : 6	**Contemporary Issues**	**2 hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**48 hours**

Text Book(s)

1	Dr.S Sankaran, 2013 **Managerial Economics** Margham Publications, 5th Revised Edition.
2	*N.K.Ananad ,Shikha Goel*, 2017. **Health Economics**. AITBS Publishers, India 2nd Edition.

Reference Books

1	*D.N.Dwivedi*. 2015. **Managerial Economics**. Vikas Publishing House Pvt Ltd 8th Revised Edition.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	Economics of Health and Health Care, IIT Kanpur

Course Designed By: R. Geetha

COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**
CO1	M	S	S	S	M	M	M	S	S	S
CO2	S	S	S	S	M	M	M	S	S	S
CO3	S	S	S	S	M	M	M	S	S	S
CO4	S	S	S	S	M	M	M	S	S	S
CO5	S	S	S	S	M	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM23C	HEALTH CARE MARKTING AND STRATEGIC MANAGEMENT	L	T	P	C
Core/Elective/Supportive		Core – VI	4	-	-	4
Pre-requisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:

1. Provide detailed knowledge on service marketing from planning to pricing strategies including control and research.
2. Learn and analyze the Nature of Business Policy, Strategic Decisions, Business Ethics and Various Business Environments.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Build knowledge on general aspects of service marketing.	K3
2	Analyze the behaviour of consumers and fulfil their expectations with required service.	K4
3	Assess marketing mix variables and a practical application in context to service marketing .	K5
4	Understand the Nature of Business Policy , Strategic Decisions and Business Ethics.	K2
5	Explain the detailed idea about the environmental analysis and its industrial applications.	K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Service Marketing Concepts	9 hours

Marketing Concepts – Need – Principles - Services – Marketing Environment – Five I's – Salient Features - Classification of Services – Dichotomous Classification of Services – Cross Classification of Services – Schmenner's Classification.

Unit:2	Consumer Behaviour	9 hours

Consumer Behaviour- Process – Elements – Service Expectations – Performance – Market Economic Dimensions – Service Style – Segmentation Variables – Market Targeting in Services – Consumer Satisfaction

Unit:3	Marketing Mix	9 hours

Elements of Marketing Mix – Service Marketing Triangles – Service Concepts – Strategic Service Design – Service Product Programming - 7P's of Service Marketing - Product – Price – Place – Promotion– People – Physical Evidence – Process – Branding – Advertisement.

Unit:4	Strategic Management	9 hours

Introduction – Nature of Business Policy and Strategic Management – Characteristics of Strategic Decisions – Strategic Management Process – Business Ethics and Strategic Management – The General Management Function – Nature of Strategic Change – Strategic Decision Making – Creative Problem Analysis.

Unit:5	Environmental Appraisal	10 hours

Economic Environment – Political Environment – Socio Cultural Environment – Environmental

Scanning – SWOT Analysis – Strategic Formulation – Generic Strategies – Functional Strategies – Formulating Different Strategies – Evaluating Strategic Alternatives – Strategic Implementation – Leadership – Values – Social Responsibility – Organizational Change – Organizational Development.		
Unit:6	**Contemporary Issues**	**2 hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**48 hours**

Text Book(s)	
1	Zeithaml, Bitner, Gremler and Pandit, 2018. **Services Marketing**. McGraw Hill Education, New Delhi. 7th Edition.
2	*P.Subba Rao*, 2017. **Business Policy and Strategic Management**. Himalaya Publishing House, 2nd Edition.
Reference Books	
1	*Philip Kotler and Gary Armstrong*, 2017. **Principles of Marketing**. Pearson Education Pvt Ltd, 17th Edition.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	Strategic Management from *Indian Institute of Management Bangalore*
2	Special Services Marketing in India from *Savitribai Phule Pune University*
Course Designed By: Mr.A.Sunil Franklin	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	S	S	S	S
CO2	S	S	S	S	S	S	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	M	S	S	M	S	S	S	S	S
CO5	S	M	S	S	M	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM23D	MATERIALS MANAGEMENT	L	T	P	C
Core/Elective/Supportive		Core – VII	4	-	-	4
Pre-requisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:

1. Make understanding of planning for an effective and efficient purchase, storage and smooth flow of materials in health care organizations.
2. Guide in developing cost-reduction techniques in purchase systems and to evaluate modern material planning and delivery in health care management.
3. Update with the use of technology to provide the best inventory management and handling materials in health care sector.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Interpret the importance of material management and relate the same in organizing the health care industry	K2
2	Experiment the purchase system in purchasing equipments and utilize the correct purchase decision for effective health care sector	K3
3	Examine the importance and role of materials manager in the process of store keeping and warehousing of health care management	K4
4	Deduct the effective inventory management system for health care industry	K5
5	Predict an efficient modern techniques for materials planning in health care organization	K6

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Integrated Material Management	10 hours

Importance of Material Management - Need for Integrated Concept – Definition and Scope – Advantages in Integrated Material Management Concept. Organization – Based on Commodities –Based on Function – Based on Location– Interdepartmental Relationship – Material Planning and Budgeting.

Unit:2	Purchasing System and Price Forecasting	9 hours

Purchase System – Price Forecasting – Purchase of Capital Equipments - International Purchasing – Buyer and Seller Relation and Ethics- Tendering Procedures- Purchase Vs. Leasing Decision.

Unit:3	Store Keeping and Warehousing	9 hours

Store Keeping and Warehousing – Definition – Objectives – Function – Importance – Role and Function of Materials Manager- Concept of Stores- Types of Stores - System and Procedures – Stores Accounting - LIFO - FIFO – Transport and Traffic Management.

Unit:4	Inventory Management	9 hours

Inventory Management – Economic Order Quantity – Practical Inventory Systems – Techniques in Inventory Management – ABC, VED, FSN Analysis– PERT- Card System and Use of Bin Cards.

Unit:5	Computers in Materials Management	9 hours

Computers in Materials Management - Material Resource Planning System – List MIS Reports in Material Management - Work Motion Time Studies and Quality Control - Various Purchase and Store Modules - Software's Used in Materials Management.		
Unit:6	**Contemporary Issues**	**2 hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**48 hours**

Text Book(s)	
1	*P.Gopalakrishnan and Sundaresan*, 2011. **Materials Management an Integrated Approach**. Prentice Hall of India Pvt. Ltd, New Delhi.
2	*M.M.Varma*, 2010. **Materials Management**. Sultan Chand & Sons New Delhi, 4th Edition.
Reference Books	
1	*Shakthi Gupta. Sunil Kant***,** 2012. **Hospital Stores Management an Integrate Approach.** Jay pee Brothers medical publishers Pvt.Ltd, New Delhi.
2	B.M. Sakharkar, 2016. **Principles of Hospital Administration and Planning** ,Jaypee Brothers Medical Publishers Pvt. Ltd., New Delhi.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	Operations Management from IIT Roorkee
2	Operations and Supply Chain Management from IIT Mardras
3	Services Marketing : Integrating People, Technology, Strategy from IIT Roorkee
Course Designed By: Mrs.V.Prabavathi	

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	M	S	S	S	S	S
CO2	S	S	S	S	M	S	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM23E	LEGAL AND ETHICAL ISSUES IN HEALTH CARE	L	T	P	C
Core/Elective/Supportive		Core – VIII	4	-	-	4
Pre-requisite			Syllabus Version		First	

Course Objectives:

The main objectives of this course are to:
1. Provide knowledge on Laws, promoting and protecting healthcare.
2. Analyze the Legal framework and its importance in Indian Healthcare.
3. Explain the role of Pharmacy Legislations and Pollution Controls.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Apply the health Law concepts and code of Ethics in health care	K3
2	Evaluate the laws related to Medical practices.	K5
3	Assess the Laws related to Hospital Administration and Hospital Finance assistance.	K5
4	Formulate the Laws related to support Services.	K6
5	Explain the Laws related to Pharmacy Legislation in India	K6

K1 – Remember; **K2** – Understand; **K3** – Apply; **K4** – Analyze; **K5** - Evaluate**; K6** – Create

Unit : 1	Health Law and Code of Ethics	9 Hours

Introduction to Health Law – Basic Concepts of Law, Courts and Legal System – Duties and Responsibilities of a Doctor – Hippocratic Oath, Geneva Declaration, Declaration of Helsinki and Medical Code of Ethics – Medical Negligence – Qualities of a Great Medical Professional – Patients Rights and Responsibilities - Euthanasia.

Unit : 2	Laws Related to Medical Practices	9 Hours

The Indian Medical Council Act, 1956 – Clinical Trials – Disability Act, 1995 – Transplantation of Human Organs Act, 1994 – Medical Termination of Pregnancy Act, 2002 – Registration of Births and Deaths Act, 1969 – Pre-Natal Diagnostics Techniques Act, 1994 – Indian Mental Health Act, 1987 – Legal Aspects of Medical Records.

Unit : 3	Laws Related to Hospital Administration and Hospital Finance	9 Hours

Law of Contract 1872 – Patient and Consumer Protection Act, 1986 – CENVAT – Insurance Regulatory and Development Authority (IRDA) – Service Tax – Sexual Harassment Act 2013.

Unit : 4	Laws Related to Support Services	9 Hours

Prevention of Food and Adulteration Act 1954 – Bio-Medical Waste (Management and Handling) Rules 2011 – Pollution Control Acts and Regulations of India 1981 – Indian Boilers Act 1923.

Unit : 5	Laws Related to Pharmacy	10 Hours
Pharmacy Legislation in India – Pharmacy Act 1948 – Drugs and Cosmetics Act 1940 – Drugs and Magic Remedies Act 1954 – Narcotic Drugs and Psychotropic Substances Act 1985 – The Drugs Order 1995 (Under the Essential Commodities Act) – Poisons Act and Rules 1919.		
Unit : 6	**Contemporary Issues**	**2 Hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**48 Hours**

Text Book(s)	
1	*Dr. S. Porkodi and Dr. Ansarul Haque*, 2011. **Health Laws and Health Care System**. Global Academic Publishers and distributors, 1st Edition.
2	*D. Samuel Abraham*, 2008. **Laws on Hospital Administration**. B.I. Publications Pvt. Ltd, 1st Edition.
Reference Books	
1	*S.S. Gulshan*. 2009. **Business Law**. Excel Books, 1st Edition.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	Legal Compliance for Incorporating Startup Indian Institute of Technology Kanpur and NPTEL via Swayam.
Course Designed By: R. Geetha	

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	S	M	S	S	S	S
CO2	M	M	S	S	S	M	S	S	S	S
CO3	M	M	S	S	S	M	S	S	S	S
CO4	M	M	S	S	S	M	S	S	S	S
CO5	M	M	S	S	S	M	S	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM23F	FINANCIAL MANAGEMENT AND ACCOUNTING	L	T	P	C
Core/Elective/Supportive		Supportive – II	3	1	-	4
Pre-requisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:
1. Guide the students to develop a framework for understanding financial and managerial reports.
2. Train on financial decisions for mangers who are working in health care institutions.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Explain the general objectives of financial management and apply the fundamental principles, concepts and techniques of financial management	K5
2	Construct the financial statement and analyze and compare the same.	K6
3	Develop fund flow, cash flow statements and computing of operation problems.	K6
4	Assess the suitability of different financing options for organizing and managing given project.	K5
5	Compare the financing costs and benefits of various courses of action and provide output by utilizing appropriate appraisal techniques.	K6

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Financial Accounting	10 hours

Definition – Accounting Principles – Concepts and Conventions – Trial Balance – Final Accounts (Problems) – Depreciation Methods - Straight Line Method, Written Down Value Method, Sinking Fund Method.

Unit:2	Financial Statement Analysis	9 hours

Objectives – Reorganizing the Financial Statement Information – Techniques of Financial Statement Analysis: Comparative Statements, Common – Size Statement, Trend Percentage – Accounting Ratios: Simple Problems – Dupont Analysis.

Unit:3	Fund Flow Statement	9 hours

Statement of Changes in Working Capital – Computation of Fund From Operations – Workings for Computation of Various Sources and Uses – Preparation of Fund Flow Statement – Cash Flow Statement Analysis – Computation of Cash From Operations Problems – Distinction Between Fund Flow and Cash Flow Statement. Problems

Unit:4	Cost Accounting	9 hours

Meaning – Distinction Between Financial Accounting and Cost Accounting – Cost Terminology: Cost, Cost Centre, Cost Unit – Elements of Cost – Cost Sheet – Problems. Budget, Budgeting, and Budgeting Control – Types of Budgets – Preparation of Flexible And Fixed Budgets, Master Budget and Cash Budget – Problems – Zero Base Budgeting.

Unit:5	Marginal Costing	9 hours

Definition – Distinction Between Marginal Costing and Absorption Costing – Breakeven Point Analysis – Contribution, P/V Ratio, Margin of Safety – Decision Making Under Marginal Costing System – Key Factor Analysis, Make or Buy Decisions, Export Decision, Sales Mix

Decision –Problems		
Unit:6	**Contemporary Issues**	**2 hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**48 hours**

Text Book(s)

1	*R L Gupta. M Radhaswam*, 2015. **Advanced Accountancy: Theory, Method and Application** - Vol. 1, Sultan Chand & Sons First edition
2	*Khan & Jain* ,2010. **Management Accounting**, Tata McGraw - Hill Education, 5th Edition.

Reference Books

1	*S K Maheshwari S N Maheshwari*, 2018. **A Textbook of Accounting for Management**, Vikas Publishing House Pvt Ltd ,4th Edition.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	Fundamentals of Financial Accounting from Savitribai Phule Pune University
2	www.managementstudyguide.com

Course Designed By: Dr. M. Viswanathan

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	M	M	M	S	S	S
CO2	S	M	S	S	M	M	M	S	S	S
CO3	S	M	S	S	M	M	M	S	S	S
CO4	S	M	S	S	M	M	M	S	S	S
CO5	S	M	S	S	M	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Third Semester

Course code	21PHM33A	HOSPITAL OPERATIONS MANAGEMENT	L	T	P	C
Core/Elective/Supportive		Core –IX	5		-	4
Pre-requisite			Syllabus Version		First	

Course Objectives:

The main objectives of this course are to:

1. Introduce the meaning, approach and types of research to the course and apply the fundamentals of sampling and scaling techniques along with methods of data collection
2. Impart the process analyzing of data, Interpretation, report writing and uses of computers in research and documentation.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understand fundamental concepts and principles of management on emerging trends and developments in management.	K2
2	Apply organizational planning systems and Decision making in health care.	K3
3	Examine various types of organizations and its elements.	K4
4	Analyze elements of directing and its importance in health care management.	K4
5	Propose controlling techniques for health care organizations.	K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Structural Organization	12 hours

Introduction to Hospital – Classification of Hospital - Modern Hospital – Hospital Organisation and Structure – Design Strategies to assist Healing - Growth of Modern Hospital - Planning the Whole Hospital - Changing System of Health Services Concept..

Unit:2	Supplementary Care Services	12 hours

Front Office - Laboratory, Blood Bank, Radiology and Imaging, Pharmacy, Nutrition and Dietary- Layout of Service Facilities.

Unit:3	Essential Care Services	12 hours

Wards Management - Operation Theatre Intensive Care Unit - Central Sterile Supply Department - Nursing Services - Accident and Emergency - Quality Department.

Unit:4	Hospital Engineering	12hours

Engineering – Civil, Electrical, Plumbing, Bio-Medical; Medical Gas supply – Air-conditioning System, Hot Water and Steam supply – Communication System – Sewage Treatment Plant (STP).

Unit:5	Supportive Care Service	10 hours

Fire Safety – Disaster Risks – Mortuary – Tele medicine –Transport– Laundry – House Keeping.

Unit:6	Contemporary Issues	2 hours

Expert Lectures, Online Seminars – Webinars

	Total Lecture hours	60 hours

Text Book(s)	
1	*G.D.Kunders*, 2008. **Hospital and facilities planning and Design** - Tata Mac Graw Hill Publishing Ltd, Delhi. 10th Edition.
2	*Syed Amin Tabish*, 2005. **Hospitals and Nursing Homes Planning Organisations and Management** Jaypee Brothers Medical Publishers (P) Ltd, Delhi.
Reference Books	
1	*S.K. Joshi*, **Quality Management in Hospitals**. Jaypee Brothers Medical Publishers (P) Ltd, 2014, Delhi.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	Production And Operation Management - Prof. Rajat Agrawal IIT INDIAN INSTITUTE OF TECHNOLOGY (IIT Roorkee)12 weeks https://nptel.ac.in/courses/110107141
Course Designed By: Mr. B Bheemaraj	

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	M	S	S	S	S	S
CO2	S	M	S	S	M	S	S	S	S	S
CO3	S	M	S	S	M	S	S	S	S	S
CO4	S	M	S	S	M	S	S	S	S	S
CO5	S	M	S	S	M	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM33B	HUMAN RESOURCE MANAGEMENT AND INDUSTRIAL RELATIONS	L	T	P	C
Core/Elective/Supportive		Core – X	4	-	-	4
Pre-requisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:

1. Learn the Human Resource functions and trends in Human Resource Management and to study the laws related to labour work force in Hospital.
2. Understand the recruitment, placement, training and development process of Human Resource Management in the Healthcare Industry.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Demonstrate the concepts of HR on the nature, importance and functional skills of Human Resource Management among the healthcare personnel.	K4
2	Understand the functional regions of demand and supply forecast used for HR management and to built skill on familiar job terminologies.	K4
3	Understand the importance of recruitment, training and development process of Human Resource Management in the Healthcare Industry.	K2
4	Assess various employee welfare acts and to implement the skill based concepts to current healthcare industrial setup.	K5
5	Measure the different types of performance appraisal strategies used in the healthcare industries.	K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Introduction to HRM in Hospitals	10 hours

Evolution of HRM – Importance – Nature – Characteristics – Functions and Role of HRM – HR Systems

Unit:2	HR Planning	9 hours

Job Design – Specification – Job Roles – Job Enrichment – Job Analysis – Job Description – Job Sharing – Promotion – Transfer - Demotion – Absenteeism, Labour Turn Over (Meanings, Purposes, Types) – Steps in Career Planning and Development System – Actions – Prerequisites For Success – Key Issues in Career Development – Manpower Requirement Analysis

Unit:3	Recruitment and Selection	9 hours

Objectives of Recruitment – Recruitment Policy – Sources of Recruitment – Traditional Techniques – Modern Techniques- Factors Affecting Recruitment – Assessment of Recruitment Programme – Selection- – Roll of Selection Procedure- Organization for Selection – Selection Procedure – Placement – Induction – Management of Changes – Technology Changes – Managing Changes – Resistance to Change – Approach to Organizational Changes – Organizational Development (Meaning, Characteristics, Values, Objectives) – Organization Culture

Unit:4	Industrial Relations	9 hours

Factories Act, 1948 - Maternity Benefit Act,1961 – Employee State Insurance Act, [ESI] 1948 – Employees' Provident Fund Scheme, 1952 – Payment of Bonus Act, 1965 – Workmen's Compensation Act, 1923 – Apprentices Act, 1961 – Contract Labour Act (R&A), 1970 – Introduction to Payment of Wages Act 1936 – KRA / KPA (With Recent Amendments)

Unit:5	**Employees` Performance Appraisal**	**9 hours**
History and Definition – Purpose – Process – Advantages – Limitation – Model Appraisal Firms – Precautions – Methods of Appraisal. Wage And Salary Administration – Introduction- Purpose – Meaning – Wages Vs Salary – Obligations of Management.		
Unit:6	**Contemporary Issues**	**2 hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**48 hours**

Text Book(s)

1	*R.C.Goyal,* 2005. **Hospital Administration and Human Resource Management**. Prentice hall of India Pvt Ltd, New Delhi. 4th Edition.
2	*Subbarao,* 2020. **Personnel and Human Resource Management Text and cases**. Himalaya Publishing House Pvt Ltd, Mumbai, 5th Edition.

Reference Books

1	*R.S. Davar*,1988. *Reprinted* 2010. **Personnel Management and Industrial relations**. Vikas Publishing House Pvt Ltd, New Delhi. 12th Revised Edition

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	HRM FOR NON-HR MANAGERS from CEC
2	www.managementstudyguide.com

Course Designed By: Dr. M. Viswanathan

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	M	S	S	S	S	S
CO2	S	M	S	S	M	S	S	S	S	S
CO3	S	M	S	S	M	S	S	S	S	S
CO4	S	M	S	S	M	S	S	S	S	S
CO5	S	M	S	S	M	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM33C	RESEARCH METHODOLOGY	L	T	P	C
Core/Elective/Supportive		Supportive- III	5	-	-	4
Pre-requisite		Statistical Tables	Syllabus Version		First	

Course Objectives:

The main objectives of this course are to:

1. Introduce the basic concepts of research and apply the fundamentals of sampling and scaling techniques along with methods of data collection.
2. Learn the process of analyzing the collected data, interpretation, report writing and application of computers in research and documentation.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understand the fundamental concepts of research, types and research process.	K2
2	Summarize the sampling design and scaling techniques.	K2
3	Construct a method for data collection and able to edit, code, classify and tabulate the collected data.	K3
4	Analyze the collected data to prove or disprove the hypothesis.	K4
5	Interpret the data and prepare a research report.	K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Introduction to Research Methodology	11 hours

Research - Definition - Significance – Criteria of Good Research – Types -Research Process – Selecting the Research Problem – Techniques Involved in Defining a Problem - Research Design : Features of a Good Design - Important Concepts Relating to Research Design - Different Research Designs.

Unit:2	Sampling and Scaling	11 hours

Sampling Design – Steps - Types - Sampling Errors and Non-Sampling Errors – Factors Influencing the Size of the Sample - Scaling – Classification of Measurement Scales - Scaling Techniques.

Unit:3	Data Collection and Preparation	12 hours

Collection of Primary Data : Observation Method –Interview Method- Questionnaire Method – Schedule Method- Some other Methods of Data Collection - Collection of Secondary Data - Case Study Method – Data Preparation : Editing - Coding- Classification - Tabulation- Graphical Representation.

Unit:4	Processing and Analyzing of Data	12 hours

Hypothesis – Basic Concepts Concerning Testing of Hypothesis - Procedure for Hypothesis Testing - Z Test - T Test - Chi-Square Test - ANOVA - Application of SPSS (Simple Problems Only).

Unit:5	Interpretation and Report Writing	12 hours

Interpretation : Techniques - Precautions - Report Writing – Steps in Writing Report - Layout of the Research Report –Types of Reports - Mechanics of Writing a Research Report - Precautions for Writing Research Reports.

Unit:6	**Contemporary Issues**	**2 hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**60 hours**

Text Book(s)

1	*C.R.Kothari, Gaurav Garg,* 2019. **Research Methodology** (Methods & Techniques). New Age International Publishers, New Delhi. 4th Edition.
2	*S.P.Gupta,* 2017. **Statistical Methods**. Sultan Chand & Sons, New Delhi. 44th Edition.

Reference Books

1	*Dr.Suresh K Sharma Stephen,* 2011. **Nursing Research and Statistics**. ELSEVIER Publishers, New Delhi.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	Business Research Methods from *CEC*

Course Designed By: Dr.S.Mohan

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	M	M	M	S	S	S
CO2	M	M	S	S	M	M	M	S	S	S
CO3	M	M	S	S	M	M	M	S	S	S
CO4	M	M	S	S	M	M	M	S	S	S
CO5	M	M	S	S	S	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM33D	HOSPITAL INFORMATION SYSTEM	L	T	P	C
Core/Elective/Supportive		Core – XI	4	-	-	4
Pre-requisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:

1. Make the students understand the role and value of information technology in potentially revolutionizing healthcare.
2. Analyze obstacles and success factors for implementation and integration of information, communication and decision technologies in healthcare.
3. Evaluate the type of information that best serves the health care sector.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Explain the importance of information and electronic communication in health care sector	K2
2	Identify the impact of automation and construct the organizational culture that manage change	K3
3	Examine the role of health care professionals in protecting the Information	K4
4	Determine the future of informatics in health care	K5
5	Create an administrative application of computer technology for health care sector	K6

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Information System	10 hours

Importance of Information–Impact on Healthcare - The Future of Healthcare Technology -World of Informatics: Importance– Rights – Structure. Health Informatics – Components -Goals-Classification – Future.

Electronic Communications: A Bit of History – Hardware and Software for Connecting – Methods of Accessing Information – World Wide Web (WEB) – Communication Technologies – Summary.

Unit:2	Changing Information System	9 hours

Impact for Automation – Organizational Culture –Resistance to Change – Importance of Managing Change – Management Strategies. Information Becomes Knowledge Through Research: Types – Data Management – Ethical Issues.

Unit:3	Role of Information	9 hours

Right Information – Process of Decision Making – Literature Database – Problems in Literature Seeking – Standards of Information Seeking. Securing the Information: Privacy and Confidentiality – Computer Crimes – Security – Law – Role of Healthcare Professionals in Protecting the Information.

Unit:4	Electronic Health Record	9 hours

Functions - Implementation – Advantages – Disadvantages. Telehealth: Types – Initiatives – Advantages – Barriers – Future. Future of Informatics: Globalization of Information in Public Health, Education, Knowledge, Security, Wireless Computing – Barriers.

Unit:5	Administrative Application of Computers	9 hours
Medical Informatics - Administrative Application of Computer Technology – Medical Office Administrative Software - Information Technology in Radiology – Information Technology in Pharmacy – Computerized Pharmacy – Tele Pharmacy.		
Unit:6	**Contemporary Issues**	**2 hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**48 hours**

Text Book(s)

1	*Kathleen M.Young*, 2000. **Informatics for Health Professionals**. F.A Davis Company, United States.
2	*Lilian Burke. Barbara Weill,* 2005. **Information Technology for the Health Professions**. Pearson Prentice Hall, United States. 2nd Edition.

Reference Books

1	*Mr.M.Sakharkar.*, 2004. **Principles of Hospital Administration and Planning** , Jaypee Brothers, Medical Publishers.
2	*Joydeep Das Gupta* , 2016. **Hospital Administration and Management**, Jaypee Publication , 2nd Edition.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	Hospital and Health Management from Institute of Health Management Research, Jaipur
2	Hospital & Health Care Management (Online) from Dr. D. Y. Patil Vidyapeeth, Pune(Deemed University)
3	Design Thinking in Health and Social Care from The Open University (OU),UK

Course Designed By: Mrs.V.Prabavathi

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	S	S	M	M	M	S	S	S
CO2	M	S	S	S	M	M	M	S	S	S
CO3	M	S	S	S	M	M	M	S	S	S
CO4	M	S	S	S	M	M	M	S	S	S
CO5	M	S	S	S	M	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM33E	QUALITY MANAGEMENT IN HEALTH CARE	L	T	P	C
Core/Elective/Supportive		Core – XII	5	-	-	4
Pre-requisite			Syllabus Version		First	

Course Objectives:

The main objectives of this course are to:

1. Provide knowledge in different quality concepts and their influence in healthcare.

2. Learn and analyze the several quality tools and techniques for healthcare industry.

3. Understand the various quality certification processes for Healthcare industry

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Identify prerequisites for quality management in Indian & International scenario.	K3
2	Evaluate the principles of quality and peculiarities of their implementation	K5
3	Explain statistical process control data to improve production planning and control.	K5
4	Compare various quality concepts tools and techniques in process improvement.	K5
5	Assess the use of quality management certification methods in solving problems of healthcare organization.	K5

K1 – Remember; **K2** – Understand; **K3** – Apply; **K4** – Analyze; **K5** - Evaluate**; K6** – Create

Unit : 1	ASPECTS OF QUALITY	10 hours

Quality in Healthcare – Definition - Evolution of Quality - Quality Gurus - Quality Indian & International Scenario - Cost of Quality - Awareness of Quality - Quality Obstacles & Benefits.

Unit : 2	TOTAL QUALITY MANAGEMENT	12 hours

Characteristics of Quality Gurus - Ethics in Quality - Quality Council - Quality Statements - Strategic Planning - Customer Perception of Quality - Customer Feedback - Service Quality - Translating Needs into Requirements - Customer Retention - Employee Motivation Teams - Recognition & Rewards - Performance Appraisal & Employee Involvement.

Unit : 3	QUALITY MANAGEMENT PROCESS – I, II	14 hours

Quality Management process – I

Simple Seven Tools of Quality Control Charts - Check Sheet - Histogram- Scatter Diagram - Process Mapping - Cause and Effect Diagram - Pareto Analysis - PDCA Cycle.

Quality Management process – II

Control Chart for Variables- X, X bar and R Charts and Control Charts for Attributes - p, Np and c Charts. Acceptance Sampling Plan - Quality Planning- Quality Improvement Methods – Kaizen.		
Unit : 4	**EVALUATION OF QUALITY SYSTEMS**	**10 hours**
Quality audits – Benchmarking - Six Sigma – JIT - Balance score card – FMEA - Stages of FMEA - Process & Types.		
Unit : 5	**ACCREDITATION / CERTIFICATION**	**12 hours**
Accreditation - Nursing Care Standards - NABL - NABH - Introduction to ISO Standards - Documentation of ISO Standards - Documentation of Quality Systems - Quality Manual - Procedure Manual - Work Instruction Manual- JCI Accreditation.		
Unit : 6	**Contemporary Issues**	**2 hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**60 hours**

Text Book(s)

1	*Bester field H. Dale*, 2018. **Total Quality Management**. Pearson, 5th Edition.
2	*S.K.Joshi*, 2009. **Quality Management in Hospitals.** Jaypee Brother Medical Publishers (P) Ltd, Delhi.

Reference Books

1	*Sridhar Bhat*. 2010. **Total Quality Management.** Himalaya Publishing House, 1st Edition.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	Masterclass in Healthcare Quality Management by Medvarsity.	

Course Designed By: R. Geetha

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	M	M	M	S	S	S
CO2	M	M	S	S	M	M	M	S	S	S
CO3	M	M	S	S	M	M	M	S	S	S
CO4	M	M	S	S	M	M	M	S	S	S
CO5	M	M	S	S	M	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Elective Courses

Course code	21PHM1EA	HOSPITAL RECORD STANDARDS AND POLICIES	L	T	P	C
Core/Elective/Supportive		Elective – I	4	-	-	4
Pre-requisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:

1. Make the students understand the organization of medical records department.
2. Bring out with a clear idea about documentation issues faced while proceeding with recording procedures in health care sector.
3. Examine the need for electronic record maintenance and its use in hospital administration.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Outline the history and role of medical records in health care sector and to interpret its legal aspects	K2
2	Organize the types of medical records quality assurance aspects in health care industry	K3
3	Examine the security of medical records and documentation practices in hospital administration	K4
4	Interpret to the documentation issues during treatment of care	K5
5	Build an effective electronic medical record systems to upgrade with the health care organization	K6

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Medical Records	9 hours

Medical Records: History and Role of Medical Records in Health Care Delivery: Medical Records Policies - Legal Aspects of Medical Records - Developments of Medical Record Forms.

Unit:2	Types of Medical Records	9 hours

Medical Records; Various Types of Medical Records; Forms and Uses. Quality Assurance Aspects, Forms and Designs and Presentation of the Records.

Unit:3	Medical Records Security	10 hours

Medical Records Security-Retention and Disposal of Medical Records. Documentation Practices that Increase Malpractice & Risks. Documenting Telephonic Conversations, Telemedicine Encounters.

Unit:4	Documentation Issues	9 hours

Focus on Specific Documentation Issues: Documenting Diagnosis Information, Documenting Refusal of Medical Advice or Treatment, Termination of Care. Issues in Email Documentation.

Unit:5	Electronic Medical Records	9 hours

Electronic Medical Records: Advantages – Concerns about Medical Records Computerization – Various Sections of Electronic Medical Record Systems.

Unit:6	Contemporary Issues	2 hours

Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**48 hours**
Text Book(s)		
1	*Mogli G.D* ,2001. **Medical Records-Organization & Management**, New Delhi, Jaypee Brothers.	
2	G.D Kunders.,2004. **Hospitals-Facilities, Planning & Management**, NewDelhi:TataMcgraw Hill.	
Reference Books		
1	*Acleson E. D*, **Linkage of Medical Records - London**: Oxford University Press	
2	Medical Devices Rules, 2017, Related Guidance documents available at CDSCO websites.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	Regulatory Requirements for medical device including in vitro diagnostics in India from NPTEL Online	
2	Health Research Fundamentals from National Institute of Epidemiology[NIE], Indian Council of Medical Research[ICMR]	
Course Designed By: MrsV.Prabavathi		

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	M	M	S	S	S
CO2	S	S	S	S	S	M	M	S	S	S
CO3	S	S	S	S	S	M	M	S	S	S
CO4	S	S	S	S	S	M	M	S	S	S
CO5	S	S	S	S	S	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM1EB	HEALTH SECTOR IN INDIA	L	T	P	C
Core/Elective/Supportive		Elective – I	4	-	-	4
Pre-requisite			Syllabus Version		First	

Course Objectives:

The main objectives of this course are to:

1. Provide knowledge in Health sectors in India

2. Learn and analyze the different system of Medicine.

3. Analyze the various medical administrative structure in India and recent trends in Hospital Administration.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Identify the Evolution and Development of Health care System	K3
2	Compare the various system of medicines and its operations	K4
3	Evaluate the administrative structure and various functions of Health Ministry Department	K5
4	Explain the Medical Infrastructure Hospitals	K5
5	Create and review of different reports on Health Care and recent trends in Hospitals	K6

K1 – Remember; **K2** – Understand; **K3** – Apply; **K4** – Analyze; **K5** - Evaluate**; K6** – Create

Unit : 1	Health Sector in India	9 Hours

Development of Health Sector in India- Evolution of Health Care System - Medicine in Antiquity - Pre-Colonial Period – Colonial Period - Present Period-The Status of Indian Health.

Unit : 2	System of Medicine	9 Hours

System of Medicine- Ayurveda – Yoga – Naturopathy – Siddha – Unani – Homeopathy – Modern Allopathic medical system.

Unit : 3	Administrative structure	9 Hours

Administrative Structure in National Level - Health Minister of State - Deputy Ministers – Departments under Health Ministry - Role, Duty and Functions.

Unit : 4	Medical Care Infrastructure	9 Hours
Prevention of Food and Adulteration Act 1954 – Bio-Medical Waste (Management and Handling) Rules 2011 – Pollution Control Acts and Regulations of India 1981 – Indian Boilers Act 1923.		
Unit : 5	**Reports on Health Care**	**10 Hours**
Review of Different Reports on Health Care in India - Recent Trends in Hospital Administration.		
Unit : 6	**Contemporary Issues**	**2 Hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**48 Hours**

Text Book(s)

1	*Kunders G.D.* 2007, **Hospitals Facilities Planning and Management.** Tata McGraw-Hill Publishing company ltd, New Delhi. 1st Edition.
2	*Goyal R.C*, **Hospital Administration and Human Resource Management.** Prentice Hall of India (P) Ltd, New Delhi. 5th Edition.

Reference Books

1	*Goel.S.L.*,**Health Care Organization and Structure.** Deep &Deep Publications Pvt Ltd, New Delhi.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	https://en.wikipedia.org/wiki/Ministry of Health and Family Welfare
2	http://www.arthapedia.in/index.php?title=Indigenous Systems of Medicines: Ayurveda,Siddha, Unani, Yoga, Homeopathy and Naturopathy

Course Designed By: R. Geetha

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	M	M	M	S	S	S
CO2	M	M	S	S	M	M	M	S	S	S
CO3	M	M	S	S	M	M	M	S	S	S
CO4	M	M	S	S	M	M	M	S	S	S
CO5	M	M	S	S	M	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM1EC	FUNDAMENTALS OF TQM	L	T	P	C
Core/Elective/Supportive		Elective – I	4	-	-	4
Pre-requisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:

1. Make the students understand the Fundamentals of TQM in a Hospital
2. Analyze the various tools and techniques used in TQM

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understand the concept and origin of TQM	K2
2	Analyze the various strategies of TQM (TEI, GLP, WITs, GMP)	K4
3	Evaluate the various role in continuous improvement in TQM	K5
4	Create and evaluate the various documentation on Quality Manual and Procedure	K6
5	Analyze the various Internal Auditing in ISO systems	K4

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Introduction to TQM	9 Hours

Concept of Quality in Emerging Scenario of TQM – Origin and Philosophy of TQM – Factors Motivating Introduction of TQM – Role of HRD in TQM – Role of Participatory Culture in TQM.

Unit:2	TQM in Various Discipline	10 hours

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)

Unit:3	Benchmarking	9 hours

Role of Continuous Improvement in TQM – Benchmarking and Business Process Reengineering – Quality Costs and Planket Burman Methods – Kaizen– JIT, TAGUCHI, SMED, CEDAC.

Unit:4	Documentation	9 hours

Documentation – Apex (Quality System) Manual / Procedure and Departmental Manuals and Work Instructions Preparations. Role Plays Exercise on Documentation.

Unit:5	Auditing	9 hours

Auditing – Types of Auditing – Internal Auditing – Second and Third party auditing – Role of Internet Auditing in ISO Systems.

Unit:6	Contemporary Issues	2 hours

Expert Lectures, Online Seminars – Webinars

	Total Lecture hours	48 hours

Text Book(s)

1 *Bester field H. Dale*, 2018. **Total Quality Management**. Pearson, 5th Edition.

2 *S.K.Joshi,* 2009. **Quality Management in Hospitals.** Jaypee Brother Medical Publishers (P)

	Ltd.
Reference Books	
1	*Sridhar Bhat*, 2010. **Total Quality Management.** Himalaya Publishing House, 1st Edition.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	Total Quality Management – I By Prof. Raghu Nandan Sengupta, IIT Kanpur
2	www.managementstudyguide.com
Course Designed By: Dr. M. Viswanathan	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	M	M	M	S	S	S
CO2	M	M	S	S	M	M	M	S	S	S
CO3	M	M	S	S	M	M	M	S	S	S
CO4	M	M	S	S	M	M	M	S	S	S
CO5	M	M	S	S	M	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM1ED	INTRODUCTION TO INDUSTRY 4.0	L	T	P	C
Core/Elective/Supportive		Elective – I	4	-	-	4
Pre-requisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:

1. Introduce the basic concepts of Industry 4.0, Artificial Intelligence, Big Data and Internet of Things.
2. Learn the applications and tools of Industry 4.0.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understand the basic concepts of Industry 4.0	K2
2	Outline the features of Artificial Intelligence	K2
3	Summarize the Big data domain stack and Internet of Things	K2
4	Identify the applications and Tools of Industry 4.0	K3
5	Analyze the skills required for future	K4

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Industry 4.0	8 hours

Need – Reason for Adopting Industry 4.0 - Definition – Goals and Design Principles - Technologies of Industry 4.0 – Big Data – Artificial Intelligence (AI) – Industrial Internet of Things - Cyber Security – Cloud – Augmented Reality.

Unit:2	Artificial Intelligence	9 hours

Artificial Intelligence : Artificial Intelligence (AI) – What & Why? - History of AI - Foundations of AI -The AI - Environment - Societal Influences of AI - Application Domains and Tools - Associated Technologies of AI - Future Prospects of AI - Challenges of AI.

Unit:3	Big Data and IoT	11 hours

Big Data : Evolution - Data Evolution - Data : Terminologies - Big Data Definitions - Essential of Big Data in Industry 4.0 - Big Data Merits and Advantages - Big Data Components : Big Data Characteristics - Big Data Processing Frameworks - Big Data Applications - Big Data Tools - Big Data Domain Stack : Big Data in Data Science - Big Data in IoT - Big Data in Machine Learning - Big Data in Databases - Big Data Use cases : Big Data in Social Causes - Big Data for Industry - Big Data Roles and Skills - Big Data Roles - Learning Platforms; Internet of Things (IoT) : Introduction to IoT - Architecture of IoT - Technologies for IoT - Developing IoT Applications - Applications of IoT - Security in IoT.

Unit:4	Applications and Tools of Industry 4.0	9 hours

Applications of IoT – Manufacturing – Healthcare – Education – Aerospace and Defence – Agriculture – Transportation and Logistics – Impact of Industry 4.0 on Society: Impact on Business, Government, People. Tools for Artificial Intelligence, Big Data and Data Analytics, Virtual Reality, Augmented Reality, IoT, Robotics.

Unit:5	Jobs 2030	9 hours
Industry 4.0 – Education 4.0 – Curriculum 4.0 – Faculty 4.0 – Skills required for Future - Tools for Education – Artificial Intelligence Jobs in 2030 – Jobs 2030 - Framework for aligning Education with Industry 4.0.		
Unit:6	**Contemporary Issues**	**2 hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**48 hours**

Text Book(s)

1	*P. Kaliraj, T. Devi*, 2020. **Higher Education for Industry 4.0 and Transformation to Education 5.0**

Reference Books

1	*Alasdair Gilchrist*, 2017. **Industry 4.0: The Industrial Internet of Things**, Apress Publications, 1st edition.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	Introduction to Industry 4.0 and Industrial Internet of Things by Prof.Sudip Misra,IIT Kharagpur.
2	A Complete Guide to Industry 4.0-Udemy

Course Designed By: Dr.S.Mohan

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	S	S	M	M	M	S	S	S
CO2	M	S	S	S	M	M	M	S	S	S
CO3	M	S	S	S	M	M	M	S	S	S
CO4	M	S	S	S	M	M	M	S	S	S
CO5	M	S	S	S	M	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM2EA	ORGANIZATION AND MANAGEMENT OF HOSPITAL RECORDS DEPARTMENT	L	T	P	C
Core/Elective/Supportive		Elective – II	3	-	-	4
Pre-requisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:

1. Make students understand the organization and management of Hospital Records Department.
2. Analyze the job description of medical record officer and technician.
3. Evaluate the information required for organizing a medical record.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Summarize the objectives and functions of organization of medical records department	K2
2	Construct an effective filing and retrieval of records	K3
3	Job description of medical record staff and operational policies	K4
4	Analyze the requirement for medical records department	K5
5	Develop the commissioning of medical record services and periodical evaluation	K6

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Organization of Medical Records Department	7 hours

Organization of Medical Records Department: Structure, Goals, Objectives and Functions - Inpatient and Outpatient Services Accident and Emergency Services.

Unit:2	Collection and Analysis of Statistics	6 hours

Collection and Analysis of Statistics: Advantages - Filing and Retrieval of Records and X-Rays.

Unit:3	Job Description	7 hours

Job Description: Duties and Responsibilities of Medical Record Officer, Medical Record Technician, Assistant Medical Record Technician. Operational Policies - Working Hours and Shifts.

Unit:4	Requirement for Medical Records Department	7 hours

Interdependent Relations of Medical Records Staff and Its Importance .Space and Equipments, Requirement for Medical Records Department, Movable and Immovable Filing Tracks: Merits and Demerits.

Unit:5	Organizing a Medical Record	7 hours

Information Required for Organizing a Medical Record: Department Methods of Commissioning of Medical Record Services and Periodical Evaluation.

Unit:6	Contemporary Issues	2 hours

Expert Lectures, Online Seminars – Webinars

	Total Lecture hours	36 hours

Text Book(s)	
1	*Mogli G.D* , 2016. **Medical Records-Organization & Management**. Jaypee New Delhi, Brothers
2	*G.D Kunders*, 2004. **Hospitals-Facilities, Planning & Management**. TataMcgraw Hill, NewDelhi.
Reference Books	
1	*Dessler, G., & Biju*, V. 2011. **Human Resource Management** . Pearson Education New Delhi, 12th Edition.
2	*Armstrong M*, 2006. **A Handbook of Human Resources Management Practice**. Kogan page limited, London. 10th Edition
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	Economics of Health and Health Care from NPTEL
2	Principles of Human Resource Management from IIT Kharagpur
3	HR for Non-HR Managers
Course Designed By: Mrs.V.Prabavathi	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	M	S	S	S	S	S
CO2	S	S	S	S	S	S	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM2EB	ORGANIZATION AND ADMINISTRATION OF HEALTH SYSTEM	L	T	P	C
Core/Elective/Supportive		Elective- II	3	-	-	4
Pre-requisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:

1. Make the students understand the organization and administration of Health System.
2.Understand various National and International Health Programs

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understand the concept of Health, various levels of Health care system.	K3
2	Analyze various ratios related to Birth rate, Death rate and Morbidity rate.	K4
3	Evaluate the International classification of various diseases.	K5
4	Evaluate various roles of All National Health Programs and its objectives.	K5
5	Understand the role of International Health Agencies.	K3

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Concept of Health	8 hours

Concept of Health and Disease - Health Environment – Levels of Health Care – Health Indicators – Health for All Vision- – Importance of Health- Need of Health Information - Health Statistics – Advantages & Disadvantages - Health Information – System in India.

Unit:2	Health Care Indices	6 hours

Common Rates & Ratios-Bed Occupancy Ratio, Morbidity Ratios, Birth Rate Ratios Etc - Incidence & Prevalence Rates.

Unit:3	Classification of Diseases	6 hours

International Classification of Diseases - Health Reports - Notifiable Diseases.

Unit:4	Health Programme	8 hours

National Health - All National Health Programs - Programs Objectives, Action Plan, Targets, Operations, Achievements and Constraints of Various National Health Programs.

Unit:5	International Health	6 hours

International Health to Conceptualize the Role of Health - International Health Agencies/NGOs Agencies and the International Health - International Health Regulations.

Unit:6	Contemporary Issues	2 hours

Expert Lectures, Online Seminars – Webinars

	Total Lecture hours	36 hours

Text Book(s)

1 *K. Park*, 2019. **Preventive and Social Medicine**. Banarsidas Bhanot Publishers, 25th Edition.

2	*Talluru Sreenivas,* **Management of Hospitals** . A.P.H. Publishing Corporation, New Delhi.
3	*Goyal R.C,* **Hospital Administration and Human Resource Management.** Prentice Hall of India (P) Ltd, New Delhi. 6th Edition.
Reference Books	
1	*Goel.S.L,* **Health Care Organization and Structure.** Deep &Deep Publications Pvt Ltd, New Delhi.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	Health care organization and the health system RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY . https://www.coursera.org/learn/healthcare-organizations-health-system
Course Designed By: Mr. B.Bheemaraj	

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	M	M	M	S	S	S
CO2	M	M	S	S	M	M	M	S	S	S
CO3	M	M	S	S	M	M	M	S	S	S
CO4	M	M	S	S	M	M	M	S	S	S
CO5	M	M	S	S	M	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM2EC	TQM TOOLS AND TECHNIQUES	L	T	P	C
Core/Elective/Supportive		Elective – II	3	-	-	4
Pre-requisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:

1. Make the students understand the concept of TQM Tools and Techniques.
2. Understand the various benchmarking and process re-engineering in Quality system.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understand the concept of Benchmarking system.	K2
2	Analyze various Benchmarking process and its implementation	K4
3	Evaluate the Quality Functional Deployment and its benefits.	K5
4	Determine Organizational Re-engineering framework and impact assessment	K5
5	Analyze the statistical process control and its development	K4

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Introduction to Benchmarking	7 hours

Benchmarking – Introduction – Process of Benchmarking – Benefits – Pitfalls – Success Indicators – Gap Analysis Process – Benchmarking Template – Initiating the Process of Benchmarking.

Unit:2	Benchmarking Process	7 hours

Benchmarking Process – What to Benchmark – Benchmark Analysis – Determining Current Competitive Gap – Projecting Future Performance Levels - Integration – Developing Action Level – Implementing and Monitoring – Rehabilitation - Maturity - Beyond Benchmarking.

Unit:3	Quality Function Deployment	6 hours

Quality Function Deployment – QFD Concept – QFD Process – QFD Team – Benefit of QFD – Voice of the Customer – Organisation of Information.

Unit:4	Reengineering	7 hours

Organisational Reengineering – Conceptual Framework Process – Process Re-Engineering- Bpr Philosophy – Possibilities and Pitfalls – Bpf Framework – Opportunity Assessment – Impact Assessment – Planning - Implementation of the Transition.

Unit:5	Statistical Process Control	7 hours

Statistical Process Control : History – Development - Statistical Fundamentals - Pareto Diagram - Process Flow Diagram - Cause and Effect Diagram - Check Sheets - Histogram –Various Control Charts – Different Control Charts for Variable State of Control – Scatter Diagrams – Problems.

Unit:6	Contemporary Issues	2 hours

Expert Lectures, Online Seminars – Webinars

	Total Lecture hours	**36 hours**
Text Book(s)		
1	*Dale H.Bester field,* 2011. **Total Quality Management**. Pearson Education India ,New Delhi. 3rd Edition.	
2	*S.K.Joshi,* 2014. **Quality Management in Hospitals.** Jaypee Brother Medical Publishers (P) Ltd,New Delhi, 2nd Edition.	
Reference Books		
1	*Sridhar Bhat,* 2010. **Total Quality Management.** Himalaya Publishig House , Mumbai ,2nd Edition.	
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]		
1	Total Quality Management – II, Indian Institute of Technology Kanpur and NPTEL via Swayam.	
Course Designed By: Dr.S.Mohan		

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	M	M	M	S	S	S
CO2	M	M	S	S	M	M	M	S	S	S
CO3	M	M	S	S	M	M	M	S	S	S
CO4	M	M	S	S	M	M	M	S	S	S
CO5	M	S	S	S	M	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM2ED	BIG DATA ANALYTICS	L	T	P	C
Core/Elective/Supportive		Elective – II	3	-	-	4
Pre-requisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:

1. Understand the importance of Big Data in the real world.
2. Learn the applications of Big Data in Healthcare industry.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Classify the data and outline the Data mining , Data warehousing	K2
2	Distinguish the Data science and other disciplines	K4
3	Summarize the characteristics of Big Data and technology process	K2
4	Assess the applications of Big Data	K5
5	Analyze the uses of Big Data in Healthcare industry	K4

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Introduction to Data	7 hours

Introduction – Data – Information – Data Terminologies – Database – Data Mining – Data Warehouse – Data Evolution Roadmap – Big Data – Definition – Type of Data - Numeric– Categorical – Graphical – High Dimensional Data — Data Classification – Hot Data – Cold Data – Warm Data – Thick Data – Thin Data - Classification of Digital Data: Structured, Semi-Structured and Un-Structured- Data Sources - Time Series – Transactional Data – Biological Data – Spatial Data – Social Network Data.

Unit:2	Data Science	7 hours

Data Science-A Discipline – Data Science vs Statistics, Data Science vs Mathematics, Data Science vs Programming Language, Data Science vs Database, Data Science vs Machine Learning. Data Analytics - – Relation: Data Science, Analytics, Big Data Analytics. Data Science Components: Data Engineering, Data Analytics-Methods and Algorithm, Data Visualization.

Unit:3	Big Data	7 hours

Digital Data-an Imprint: Evolution of Big Data – What is Big Data – Sources of Big Data. Characteristics of Big Data 6Vs – Big Data Myths - Data Discovery-Traditional Approach, Big Data Technology: Big Data Technology Process – Big Data Exploration - Data Augmentation – Operational Analysis – 360 Views of Customers – Security and Intelligence.

Unit:4	Applications of Big Data	6 hours

Big Data Technology Potentials – AI – Machine Learning – Cloud Computing – Mobile Communication – IoT – Big Data in Industry 4.0- Big Data Platforms – HADOOP – SPARK – No SQL Databases - Types - Big Data Challenges.

Unit:5	Big Data Use, Cases	7 hours

Big Data Roles Data Scientist , Data Architect, Data Analyst – Skills – Case Study : Big Data – Customer Insights – Behavioural Analysis – Big Data Industry Applications - Marketing – Retails

– Insurance – Risk and Security – Health care.		
Unit:6	**Contemporary Issues**	**2 hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**36 hours**

Text Book(s)

1	*V. Bhuvaneswari, T. Devi*, 2018. **Big Data Analytics**, Scitech Publisher
2	*Han Hu, Yonggang Wen, Tat-Seng, Chua, Xuelong Li*, **Toward Scalable Systems for Big Data Analytics: A Technology Tutorial** , IEEE, 2014.

Reference Books

1	*Venkat Ankam*. 2016. **Big Data Analytics**, Packt Publishing Limited.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	Big Data Analytics for Smart Grid by Dr.Ritula Thakur ,National Institute of Technical Teachers Training and Research,Chandigarh.

Course Designed By: Dr.S.Franklin John

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	S	S	M	M	M	S	S	S
CO2	M	S	S	S	M	M	M	S	S	S
CO3	M	S	S	S	M	M	M	S	S	S
CO4	M	S	S	S	M	M	M	S	S	S
CO5	M	S	S	S	M	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM3EA	INTERNATIONAL CLASSIFICATION OF DISEASES	L	T	P	C
Core/Elective/Supportive		Elective – III	4		-	4
Pre-requisite			Syllabus Version		First	

Course Objectives:

The main objectives of this course are to:

1. Make the students understand the international classification of Diseases.
2. Understand the importance of using ICD in Mental and Health Statistics.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understand the history and uses- ICD design and structure.	K3
2	Analyze Basic coding guidelines and principles.	K4
3	Evaluate the Diseases Indexing and Operations.	K5
4	Evaluate Amendments of ICD 9 and ICD 10.	K5
5	Analyze the role of electronic medical records and its importance.	K4

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Basics of Classification	9 hours

International Classification of Disease: History and Uses-Design of ICD and Structure.

Unit:2	Principles of ICD	9 hours

How to Use ICD - Basic Coding Guidelines - Principles and Rules of Coding - WHO Guidelines.

Unit:3	Disease Index	9 hours

International Classification of Procedures in Medicines-Indexing Of Diseases and Operations.

Unit:4	ICD – 10	9 hours

Salient Features of the Amendments to the ICD-10.Difference between ICD-9 And ICD-10.

Unit:5	Essentials of ICD	10 hours

Role of International Classification of Diseases in Managing Electronic Medical Records. Importance of Using ICD in Mental and Health Statistics.

Unit:6	Contemporary Issues	2 hours

Expert Lectures, Online Seminars – Webinars

	Total Lecture hours	48 hours

Text Book(s)

1. *Mogli G.D*, **Medical Records-Organization & Management,** New Delhi, Jaypee Brothers. 2nd Edition
2. *G.D Kunders*, 2008. **Hospitals-Facilities, Planning & Management**, Tata McGraw Hill, NewDelhi.

Reference Books

1. *K. Park*. 2019, **Preventive and Social Medicine**. Banarsidas Bhanot Publishers, 25th Edition.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	International classification of disease WORLD HEALTH ORGANIZATION interactive self learning tool. https://icd.who.int/training/icd10training/
2	INFECTIOUS AND COMMUNICABLE DISEASE DISEASES by medical Microbiology
Course Designed By: Mr. B Bheemaraj	

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	S	S	M	M	M	S	S	S
CO2	M	S	S	S	M	M	M	S	S	S
CO3	M	S	S	S	M	M	M	S	S	S
CO4	M	S	S	S	M	M	M	S	S	S
CO5	M	S	S	S	M	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM3EB	HEALTH CARE DELIVERY SYSTEM	L	T	P	C
Core/Elective/Supportive		Elective – III	4	-	-	4
Prerequisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:

1. Make the students understand the Health care Delivery System.
2. Inculcate the concept of Disaster Management, Biomedical waste Management and usage of computers in medicine.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understand the overview of health care delivery system.	K2
2	Analyze the clinical terminology in specialty wise.	K4
3	Evaluate the organization of Medical records department	K5
4	Assess the importance of disaster management system, Medical insurance and Biomedical waste management in hospital	K5
5	Analyze the computer applications in Medicine.	K4

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Introduction to Healthcare Delivery System	9 hours

Healthcare Delivery System – An Overview – Common Terms of Healthcare Management: Terms Related to Levels of Health Care - Primary, Secondary and Tertiary - Systems of Medicine - Preventive and Curative Medical Care – General and Specialty Hospitals Indian Systems of Medicine.

Unit:2	Specialty-wise Terminology	9 hours

Specialty-wise Terminology – Pathology Terms of Common Use – Clinical, Diagnostic and Therapeutic Terms – Pediatric Services – Dental – Psychiatric – Casualty and Emergency – Neurology – Obstetrics and Gynecology – Dermatology Intensive Care – Coronary Care Services.

Unit:3	Medical Records	9 hours

Medical Records – Admission – Billing - Nursing Records - Diagnostic Records - Infection Control Records - Maintenance of Operation Theatres Records - Maintenance of Intensive Care Units Records - Clinical Records – Housekeeping Records – Food Records – Engineering Records – Maintenance Records – Security Records – Fatal Documents – Mortuary Maintenance Records – Transportation – Medico Legal Records.

Unit:4	Disaster Management, Medical Insurance , Biomedical Waste Management	10 hours

Disaster Management : Basic Concepts - Principles of Disaster Planning - Objectives of a Hospital Disaster Plan - Disaster Committee - Organisation - Roles and Responsibilities - Organising Disaster Facilities.

Medical Insurance : Insurance Policy – Health Insurance in Indian Scenario – Economics of Life and Health Insurance - Importance – Health Insurance Policies – Administration of Health

Insurance Schemes.

Biomedical Waste Management & Handling Rule Management – Schedules – Segregation - Bio Medical Waste Collection – Transportation – Disposal - Modern Technology for Handling BMW - Radioactive Waste Handling.

Unit:5	Computers in Medicine	9 hours

Computers in Medicine – System Design - Multichannel Computerised ECG, EMG and EEG Data Acquisition - Storage and Retrieval, Transmission of Signal and Images - Patient Monitoring - Physiological Monitoring - Automated ICU - Computerised Arrhythmia Monitoring - Information Flow in a Clinical Lab - Computerised Concepts - Interfacing to HIS - Computers in Medical Systems and Medical Research.

Unit:6	Contemporary Issues	2 hours

Expert Lectures, Online Seminars – Webinars

	Total Lecture hours	48 hours

Text Book(s)

1. *Sharma D.K, Goyal R.C,* 2013 . **Hospital Administration and Human Resource Management.** Prentice Hall of India (P) Ltd, New Delhi, 5th Edition.
2. *Goel.S.L,* 2001. **Health Care System and Management.** Deep &Deep Publications Pvt Ltd, New Delhi , 1st Edition.

Reference Books

1. *R.D.Lee*, 2005, **Computers in Medicine**, Tata McGraw-Hill, New Delhi, 1st Edition.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1. Disaster Preparedness for the Health Care Professional Johns Hopkins University via Coursera.

Course Designed By: Mr.A.Sunil Franklin

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	M	M	M	S	S	S
CO2	M	M	S	S	M	M	M	S	S	S
CO3	M	M	S	S	M	M	S	S	S	S
CO4	M	M	S	S	M	M	S	S	S	S
CO5	M	S	S	S	M	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM3EC	TOTAL QUALITY MANAGEMENT IN HOSPITALS	L	T	P	C
Core/Elective/Supportive		Elective – III	4	-	-	4
Pre-requisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:
1. Make the students understand the Total Quality Management in Hospitals.
2. Understand the concept of continuous process improvement and its applications.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understand the overview of TQM.	K3
2	Analyze the application of TQM in various sector	K4
3	Evaluate the tools and techniques of TQM	K5
4	Evaluate the assessment methodologies of TQM	K5
5	Analyze the statistical quality control system	K4

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	TQM and Customer Satisfaction	10 hours

TQM – Leading Practices – Ethics – Role – Quality Assurance – Quality Control – Customer Satisfaction – Customer Perception of Quality – Service Quality – Translating Needs into Requirements – Customer Retention – Employee Motivation Teams – Recognition and Reward – Performance Appraisal Benefits – Employee Involvement.

Unit:2	TQM in Relationship Management	9 hours

TQM in Service Sector – TQM and Management Relationship – Personnel Management in TQM Environment – Labour Relations in TQM Environment - Relationship Development.

Unit:3	Process Improvement	9 hours

Continuous Process Improvement – Process – Improvement Strategies – Types of Problems – PDSA Cycle – Problem Solving Method – Six Sigma.

Unit:4	Supply Chain Management	9 hours

Six Sigma Assessment Methodology – Leveraging the Internet for Supply Chain Efficiency – Current State of Ecommerce – Supplier Buyer Integration – Steps to Improve Supply Chain Management.

Unit:5	Quality Control	9 hours

Statistical Quality Control – Tools and Techniques in Process And Quality Management – Program Identification Tools and Their Role in Quality Management – Tools for Data Collection and Analysis – Scope of Statistical Process Control Measurement and Control – Process Measurement – Corrective Action.

Unit:6	Contemporary Issues	2 hours

Expert Lectures, Online Seminars – Webinars

	Total Lecture hours	48 hours

Text Book(s)	
1	*Bester field H. Dale*, 2018. **Total Quality Management**. Pearson, 5th Edition.
2	*S.K.Joshi, 2009.* **Quality Management in Hospitals.** Jaypee Brother Medical Publishers (P) Ltd
Reference Books	
1	*Sridhar Bhat*, 2010. **Total Quality Management.** Himalaya Publishing House, 1st Edition.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	Total Quality Management – I By Prof. Raghu Nandan Sengupta, IIT Kanpur
2	www.managementstudyguide.com
Course Designed By: Dr. M. Viswanathan	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	M	M	M	S	S	S
CO2	M	M	S	S	M	M	M	S	S	S
CO3	M	M	S	S	M	M	M	S	S	S
CO4	M	M	S	S	M	M	M	S	S	S
CO5	M	M	S	S	M	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHM3ED	DATA ANALYTICS USING R	L	T	P	C
Core/Elective/Supportive		Elective- III	4	-	-	4
Pre-requisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:
1. Provide basic knowledge about Data analytics using R.
2. Learn the Data processing, Data summarization, Data visualization and Reporting tools.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Understand the features of R language	K2
2	Apply the data processing concept in healthcare industry	K3
3	Analyze the data available in the hospital by applying the concept of Data summarization and visualization	K4
4	Judge the suitable reporting tool to analyze the hospital data	K5
5	Assess the case studies in data analytics	K5

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Introduction to R	10 hours

Data Analysis Vs Data Analytics – Data Analytics – Types - Data Analytics – Framework – Data Analytics – Tool - R language - Understanding R features - Installing R and R Studio – Packages and Library – Importing and Exporting Files: CSV File – JSON File – txt File –Excel File – Xml File - Command Line Vs. Scripts.

Unit:2	Data Processing	9 hours

Data Pre-Processing – Missing Value – Omitting Null Values - Data Transformation – Data Selection – Data Integration – Data Manipulation: Slicing - Subscripts and Indices – Data Subset - Dplyr Package: Select Function - Filter Function - Mutate Function - Arrange Function.

Unit:3	Data Summarization & Visualization	10 hours

Data Summarization & Visualization - Mean – Median – Mode - Variablity Measures - Variance – Range - IQR – Standard Deviation – Sum of Squares –Identifying Outliers using IQR. Data Visualization – Introduction – Datasets – Exploratory Data Analytics – Univariate Analysis – Histogram - Bivariate Analysis - Box Plot – Multivariate Analysis - Scatter Plot - MASS Package - Categorical Variable –Bar Chart – Mosaic Plot.

Unit:4	Reporting Tool	10 hours

Reporting Tool – Analysing Gathering Information – Story Telling – R Markdown - R Markdown Framework - markdown package – Knit for Embedded Code: knitr package - Convert File:HTML, PDF, MS Word - Markdown Formatted Text - ShinyApp - shiny package: Built Shiny app – Control Widgets – Customize Reactions – Reactive Expressions - Customize Appearance - Deploy Shiny app.

Unit:5	Data Analytics Case Studies	7 hours

Data Analytics Case Studies – Marketing – Logistic Management – Insurance –

Behavioural Analytics – Data Analytics on Diamond Dataset.		
Unit:6	**Contemporary Issues**	**2 hours**
Expert Lectures, Online Seminars – Webinars		
	Total Lecture hours	**48 hours**

Text Book(s)	
1	*V. Bhuvaneswari*, 2016. **Data Analytics with R Step by Step**, Scitech Publisher, ISBN – 978-81- 929131-2-4,
2	Roger D.Peng, 2014. **R Programming for Data Science**, Lean Publishing.
3	*Vignesh Prajapati*, 2013. **Big Data Analytics with R and Hadoop** , Packt Publishing, ISBN-978-1-78216-328-2.
Reference Books	
1	*Sholom Weiss, et.al*, 2010. **The Text Mining Handbook: Advanced Approaches in Analysing Unstructured Data**, Springer.
2	*Emmanuel Paradis* . 2005. **R for Beginners**.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	Data Analysis with R Facebook via Udacity.
2	Business Analytics and Data Mining Modeling using R by Prof.Gaurav Dixit,IIT Roorkee.
Course Designed By: Dr.S.Franklin John	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	S	M	S	M	M	M	S	S	S
CO2	M	S	M	S	M	M	M	S	S	S
CO3	M	S	M	S	M	M	M	S	S	S
CO4	M	S	M	S	M	M	M	S	S	S
CO5	M	S	M	S	M	M	M	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHMSS1	HOSPITAL HAZARDS MANAGEMENT	L	T	P	C
Core/Elective/Supportive		Self Study (Semester - I to III)	-	-	-	1
Pre-requisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:

1. Enable students to understand hazards in hospital environment and infection control system in hospital.
2. Learn the Biomedical waste management system.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Outline the hospital hazards and preventive measures	K2
2	Choose the suitable measures to control the hospital acquired infection	K3
3	Categorize the biomedical wastes and it's management	K4
4	Plan human waste disposal and sewage disposal	K3
5	Summarize the medical insurance	K2

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1 Introduction to Hospital Hazards

Hospital Hazards: Meaning – Types – Physical – Biological - Mechanical - Psychological – It's Impact on Employees - Preventive Measures - Hospital Hazards Management: Meaning – Need – Principles – Purpose.

Unit:2 Infection

Control of Hospital Acquired Infection: Types of Infection – Common Nosocomial Infection and their Causative Agents – Prevention of Hospital Acquired Infection – Role of Central Sterile Supply Department – Infection Control Committee – Monitoring and Control or Cross Infection- Staff Health.

Unit:3 Biomedical Waste Management

Biomedical Waste Management: Meaning – Categories of Biomedical Wastes – Disposal of Biomedical Waste Products – Incineration and it's Importance – Indian Medical Association – TNPCB Rules and Schedules – Standards for Waste Mutoclaving, Micro waving and Deep Burial – Segregation – Packaging – Transportation – Storage.

Unit:4 Human Waste and Sewage Disposal

Human Waste Disposal and Sewage Disposal: Diseases Carried from Excreta – Sanitation Barrier – Methods of Excreta Disposal – Sewage Wastes: Meaning – Composition – Aims of Sewage Disposal – Decomposition of Organic Matter –Modern Sewage Treatment – Drawbacks of Improper Disposal of Wastes –Solid and Liquid.

Unit:5 Medical Insurance

Medical Insurance: National Insurance Companies – Paramount Health Care Services – Third Party Insurance – Payment Terms and Conditions – Limitations of Liability and Indemnity.

Unit:6	Contemporary Issues	
Expert Lectures, Online Seminars – Webinars		

Text Book(s)

1	*Park.K*, 2020. **Text Book on Preventive and Social Medicine,** Banarsidas Bhanot Publication, Pune, 25th Edition.

Reference Books

1	*Pyalai Chatterjee*, 2017. **Bio Medical waste Management**, Grin Verlag.
2	*James T. Tweedy*, 2014.**Healthcare Hazard Control and Safety Management**, CRC Press, 3rd Edition.

Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]

1	Basic Medical/Biomedical Waste Management Course by Vishnu Narayan – Udemy
2	Infection control and Prevention by Deborah Casey – Udemy

Course Designed By: Dr.S.Mohan

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	M	M	S	S	M	S	S	S	S	S
CO2	M	M	S	S	M	S	S	S	S	S
CO3	M	M	S	S	M	S	S	S	S	S
CO4	M	M	S	S	M	S	S	S	S	S
CO5	M	M	S	S	M	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHMSS2	BRAND MANAGEMENT	L	T	P	C
Core/Elective/Supportive		Self Study (Semester - I to III)	-	-	-	1
Pre-requisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:
1. Enable students to understand the basic concepts of Branding and Strategic Brand Management.
2. Learn Brand Promotion, Brand Extension and Brand Equity.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Explain branding and it's functions	K2
2	Build a strong brand and position in the competitive market	K3
3	Construct the brand promotion methods	K3
4	Analyze the different type of brand extension	K4
5	Discover the brand equity management	K4

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Introduction to Branding	

Basic Understanding of Brand – Definition - Branding Concepts – Functions of Brand - Significance of Brands – Different Types of Brands – Co branding – Store Brands.

Unit:2	Strategic Brand Management	

Strategic Brand Management Process – Building a Strong Brand – Brand Positioning – Establishing Brand Values – Brand Vision – Brand Elements – Branding for Global Markets – Competing with Foreign Brands.

Unit:3	Brand Promotion	

Brand Image Building – Brand Loyalty Programmes – Brand Promotion Methods – Role of Brand Ambassadors - Celebrities – On line Brand Promotions.

Unit:4	Brand Extension	

Brand Adoption Practices – Different Type of Brand Extension – Factors Influencing Decisions for Brand Extension – Re-Branding and Re-Launching – Brand Rejuvenation.

Unit:5	Brand Equity	

Branding Strategies - Measuring Brand Performance – Brand Equity Management - Brand Equity Measurement – Brand Leverage - Global Brand Audit – Role of Brand Managers – Branding Challenges & Opportunities – Case Studies.

Unit:6	Contemporary Issues	

Expert Lectures, Online Seminars – Webinars

Text Book(s)

1 *Kevin Lane Keller, Vanitha Swaminathan*, 2019. **Strategic Brand Management:**

	Building, Measuring and Managing Brand Equity, Prentice Hall, 5th Edition.
2	*Harsh V.Verma*, 2006 . **Brand Management : Text & cases**, Excel Books India.
Reference Books	
1	*Paul Tmeporal*, 2000. **Branding in Asia**, John Willy & sons (P) Ltd, New York.
2	*Ramesh Kumar*, 2002.**Managing Indian Brands**, Vikas Publication, India.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	Brand Management by Preeti Krishnan Lyndem, Indian Institute of Management Bangalore
Course Designed By: Dr. M. Viswanathan	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	S	S	S	S	S	S
CO2	S	M	S	S	S	S	S	S	S	S
CO3	S	M	S	S	S	S	S	S	S	S
CO4	S	M	S	S	S	S	S	S	S	S
CO5	S	M	S	S	S	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Course code	21PHMSS3	CUSTOMER RELATIONSHIP MANAGEMENT	L	T	P	C
Core/Elective/Supportive		Self Study (Semester - I to III)	-	-	-	1
Pre-requisite			Syllabus Version	First		

Course Objectives:

The main objectives of this course are to:
1.Enable the students to learn the basics of Customer Relationship Management
2.Learn Sales Force Automation and Database Marketing

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

1	Interpret the relationship marketing	K2
2	Summarize the evolution of customer relationship management	K2
3	Apply the sales force automation	K3
4	Examine the value chain	K4
5	Analyze the customer relationship technologies	K4

K1 - Remember; **K2** - Understand; **K3** - Apply; **K4** - Analyze; **K5** - Evaluate; **K6** – Create

Unit:1	Relationship Marketing	

Overview of Relationship Marketing – Basis of Building Relationship – Types of Relationship Marketing – Customer Life Cycle.

Unit:2	Customer Relationship Management	

CRM – Overview and Evolution of the Concept – CRM and Relationship Marketing – CRM Strategy – Importance of Customer Divisibility in CRM.

Unit:3	Sales Force Automation	

Sales Force Automation – Contact Management – Concept – Enterprise Marketing Management – Core Beliefs – CRM in India.

Unit:4	Value Chain	

Value Chain – Concept – Integration Business Management – Benchmarks and Metrics – Culture Change – Alignment with Customer Eco System – Vendor selection.

Unit:5	Database Marketing	

Database Marketing – Prospect Database – Data Warehouse and Data Mining – Analysis of Customer Relationship Technologies – Best Practices in Marketing Technology – Indian scenario.

Unit:6	Contemporary Issues	

Expert Lectures, Online Seminars – Webinars

Text Book(s)

1. *S. Shajahan,* 2006. **Relationship Marketing,** Tata Mc Graw Hill Education.
2. *Paul Green Berg,* 2009**. Customer Relationship Management**. Tata Mc Graw Hill.

Reference Books	
1	*Philip Kotler and Gary Armstrong*. 2017. **Principles of Marketing**. Pearson Education Pvt Ltd, 17th Edition.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	Customer Relationship Management by Prof.Swagato Chatterjee, IIT Kharagpur
2	Customer Relationship Management by Shainesh G, Indian Institute of Management Bangalore
Course Designed By: Mr. B Bheemaraj	

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	S	M	S	S	S	S	S
CO2	S	M	S	S	M	S	S	S	S	S
CO3	S	M	S	S	M	S	S	S	S	S
CO4	S	M	S	S	M	S	S	S	S	S
CO5	S	S	S	S	M	S	S	S	S	S

*S-Strong; M-Medium; L-Low

Value Added Course

VALUE ADDED COURSE - I

MEDICAL TERMINOLOGY & PROCEDURES		
Course Objectives:		
The main objectives of this course are to: 1. Identify and define combining forms, prefixes and suffixes pertaining to the Human anatomy and physiology system. 2. Correctly spell and pronounce medical terminology associated with the Human anatomy and physiology system. 3. Identify and define selected anatomical and pathology terms associated with the Human anatomy and physiology system. 4. State and describe diagnostic procedures, treatments and therapeutic procedures associated with the Human anatomy and physiology system. 5. State abbreviations associated with the Human anatomy and physiology system.		
Module 1	**Fundamentals of Medical Terminology** Word Roots- Prefix – Suffix - Abbreviations & Symbols	**3 hours**
Module 2	**Introduction to Anatomy & Physiology**	**3 hours**
Module 3	**Organs & Systems** Gastro Intestinal – Respiratory – Circulatory – Renal – Reproductive – Nervous	**6 hours**
Module 4	**Common Diseases & Procedures** Gastro Intestinal – Cholecystitis – Cholelithiasis – Appendicitis - Intestinal Obstruction – Hernia – Peritonitis	**3 hours**
Module 5	**Common Diseases & Procedures** Respiratory – Tuberculosis - Bronchial Asthma - Respiratory Failure - Pulmonary Embolison – Pneumonia -Branchosopy, Pulmonary Function Test, Cardio-Pulmonary Resuscitation	**3 hours**
Module 6	**Circulatory** Hypertension - Coronary Artery Disease – Arrhythmias - Cardiac Arrest	**3 hours**
Module 7	**Renal** Nephrotic Syndrome - Urinary Tract Infection - Renal Failure - Renal / Bladder Stones - Intravenous Pylography, Cystoscopy	**3 hours**
Module 8	**Reproductive** Female – Breast Cancer/Self Examination - Menstrual Disorders, Dysmenorrhoea - Premenstrual Syndrome (PMS) -Menorrhagia Ovarian Cyst, Fibroids - Malignancy, Infertility Mammography, Ultra Sound, Laparoscopy, IVF, Tubectomy, D & C. - Male - Prostate Enlargement, Hydrocele, Impotence	**3 hours**
Module 9	**Nervous** Stroke (Cerebro Vascular Accident) - Brain Tumor - Brain Injuries - Spinal Cord Injuries - Lumbar Puncture, Myelography, CT Scan, MRI, EEG, EMG	**3 hours**
	Total Lecture hours	**30 hours**

Text Book(s)	
1	*Gerard J. Tortora and Bryan Derrickson*, 2016. **Principles of Anatomy & Physiology**, Wiley & Sons, 15th Edition.
2	*Anne Waugh and Allison Grant*, 2014 **Anatomy & Physiology in Health and Illness** Churchil Livingstone, 12th Edition.
Reference Books	
1	*Evelyn C Pearce*, **Anatomy & Physiology for Nurses** , Jaypee Brothers, New Delhi, 16th Edition.
2	Dorland's Pocket Medical Dictionary.
3	Taber's Cyclopedic Medical Dictionary , F.A.Davis PT collection, 23rd Edition.
4	*Sampath Madhyastha* ,2015. **Manipal Manual of Anatomy** , CBS Publication, 2nd Edition.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	Medical Terminology by Paul Stewart – Udemy
2	Medical Terminology and Medical Abbreviations 2020 by Dr.Sumaiya Fatima- Udemy
Course Designed By: Mr.A.Sunil Franklin	

VALUE ADDED COURSE - II

DISASTER MANAGEMENT		
Course Objectives:		
The main objectives of this course are to: 1. Provide basic conceptual understanding of disasters and its relationships with development. 2. Understand the approaches of Disaster Risk Reduction (DRR) and the relationship between vulnerability, disasters, disaster prevention and risk reduction. 3. Prevent and control Public Health consequences of Disasters 4. Build skills to respond to disasters.		
Module 1	**Introduction on Disaster** Different Types of Disaster - Natural Disaster: Flood, Cyclone, Earthquakes, Landslides etc- Man-made Disaster: Fire, Industrial Pollution, Nuclear Disaster, Biological Disasters, Accidents (Air, Sea, Rail & Road), Structural failures(Building and Bridge),War & Terrorism etc. – Causes and Effects - Practical Examples for all Disasters.	**6 hours**
Module 2	**Understanding Man-Made Disasters** Understanding Man-Made Disasters - Nuclear Disasters -Chemical Disasters - Biological Disasters - Building Fire - Coal Fire - Forest Fire - Oil Fire - Air Pollution - Water Pollution – Deforestation - Industrial Pollution - Road Accidents - Rail Accidents - Air Accidents - Sea Accidents	**6 hours**
Module 3	**Approaches To Disaster Risk Reduction** Disaster Risk Reduction Strategies -Disaster Cycle - Phases of Disaster - Preparedness Plans, Action Plans and Procedures, Early Warning Systems Models in Disaster Preparedness - Community based DRR - Factors Affecting Vulnerabilities -Undertaking Risk and Vulnerability Assessments - Policies for Disaster Preparedness Programs - Roles and Responsibilities	**6 hours**
Module 4	**Disaster Response** Introduction - Disaster Response Plan - Communication, Participation and Activation of Emergency Preparedness Plan - Search, Rescue, Evacuation and Logistic Management - Role of Government - International and NGO Bodies - Psychological Response and Management (Trauma, Stress, Rumour and Panic) - Relief and Recovery - Medical Health Response to Different Disasters	**6 hours**
Module 5	**Rehabilitation, Reconstruction and Recovery** Reconstruction and Rehabilitation as a Means of Development - Damage Assessment - Post Disaster Effects and Remedial Measures - Creation of Long-term Job Opportunities and Livelihood Options - Disaster Resistant House Construction - Sanitation and Hygiene - Education and Awareness - Dealing with Victims' Psychology - Long-term Counter Disaster Planning - Role of Educational Institute.	**6 hours**
	Total Lecture hours	**30 hours**

Text Book(s)	
1	*Dr. Mrinalini Pandey*, 2014. **Disaster Management**, Wiley India Pvt. Ltd.1st Edition.
2	*Tushar Bhattacharya*, 2014. **Disaster Science and Management**, McGraw Hill Education (India) Pvt. Ltd.
Reference Books	
1	*Jagbir Singh*, 2013. **Disaster Management : Future Challenges and Opportunities**, IK International Publishing House.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	Disaster Management by Naveen Kumar Nanjundan, University of Hyderabad
2	Disaster Recovery and Build Back Better by Prof.Ram Sateesh Pasupuleti & Prof.Subhojyoti , IIT Roorkee , KyotoUniversity Japan
Course Designed By: Mr.A.Sunil Franklin	

Job Oriented Certificate Course

JOB ORIENTED COURSE - I

MEDICAL RECORDS MANAGEMENT		
Course Objectives:		
The main objectives of this course are to: 1. Learn the history and characteristics of quality medical records. 2. Know the different filing methods, storage and retention. 3. Organize and Manage the Medical records department.		
Module 1	**History of Medical Records** Early Ancient Times to Renaissance Period (16th &17th Centuries) - 18th -20th Centuries and Till Date - In U.S.A. - At International Level - In India	**4 hours**
Module 2	**Characteristics of quality Medical Records** Characteristics of 'Good' Medical Record - Values of 'Good' Medical Record to Various Users - Required Characteristics of Entries in Medical –Records - Responsibility for Medical Record Quality Source-oriented, Problem-oriented, and Integrated Medical Records - Medical Record Forms and their Content - Standard Order of Arrangement of Medical Record Forms - Analysis of Medical Record-Quantitative & Qualitative - Incomplete Record	**6 hours**
Module 3	**Filing Methods, Storage and Retention** Numbering and Filing Systems - Filing Storage- Microfilming and Disk Storage - Retention Registers & Indexes Record Movement Control & Tracking System	**4 hours**
Module 4	**Organizational Aspects of Medical Record Department/Services** Policies Functions Location - Space and Layout Equipment - Forms Designing and Control - Medical Records Flow and Processing	**4 hours**
Module 5	**Organizational Aspects of the Centralized Admitting Services** Principles of Identification of a Patient - Methods of Collection of Identification Data - Types of Central Admitting Services - Admitting Policies - Procedure Outlines for Admissions Flow of Records following Admissions - Advantages of Good Admitting Policies and Procedures - Pre-requisites for Smooth & Efficient functioning of the Centralized Admitting Services	**4 hours**
Module 6	**Medical Record Department Management** Planning, Organizing, Directing and Controlling - Personnel - Principal Responsibilities and Duties of the Medical Record Administrator/ Director -Tools of Management in the Hands of the Medical Record Administrator/Manager	**4 hours**
Module 7	**Medico-Legal Aspects of the Medical Records** Medical Ethics , Hippocratic Oath, and Code of Ethics for the Medical Record Professionals - Ownership of the Medical Record Privileged	**4 hours**
	Total Lecture hours	**30 hours**

Text Book(s)	
1	*Edna K.Huffman*, **Medical Record Management**, Physicians' Record Company.
2	*Mogli Gd*, 2016. **Medical Records Organization and Management**, Jaypee Brothers Medical Publishers, 2nd Edition.
Reference Books	
1	*Kathleen M La Tour and Shirley Eichenwald* , 2010**. Health Information Management: Concepts, Principles and Practice**, Chicago Publishers, 3rd Edition.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	https://study.com/articles/Online_Medical_Records_Technician_Course_Information.html
2	https://study.com/medical_records_course.html
Course Designed By: Mr.A.Sunil Franklin	

JOB ORIENTED COURSE - II

QUALITY ACCREDITATIONS IN HEALTH CARE		
Course Objectives:		
The main objectives of this course are to: 1. Understand the concept of accreditation and standards of quality. 2. Learn the quality certification system. 3. Analyze the NABH, JCI Accreditation in hospital sectors.		
Module 1	**Introduction to Accreditation** Quality Accreditation – Meaning - Need and Importance – Evolution of Quality Accreditations – Role of Accreditations in Healthcare - Accreditations in Indian and International Scenario - Benefits and Challenges.	**6 hours**
Module 2	**Accreditation and Standards** Hospital Accreditation - Accreditation Models - Patient Centered Standards - Healthcare Organization Management Standards – Quality Standards - QCI - ISO Certification - NABH – NABL - JCI.	**6 hours**
Module 3	**Quality Certification systems** ISO – Concepts and Elements of ISO – Areas of ISO – ISO Family – ISO Certification in Healthcare - Environment Management Systems - Stages of Environmental Management Standards – Evaluation and Compliance.	**6 hours**
Module 4	**NABH** QCI - Overview of NABH Accreditations – Importance and Benefits of NABH to Hospitals - Process – Standards – Documentations – Requirements	**6 hours**
Module 5	**JCI** ISQua - JCI Accreditations – Overview – Objectives of JCI - Need and Importance of JCI – Standards – Procedure – Documentations – JCI Accredited Hospitals in India	**6 hours**
	Total Lecture hours	**30 hours**
Text Book(s)		
1	*Brajkishore Rajoriya* **,** 2017**. Hospital and Healthcare Accreditation** (As per the Guidelines of NABH,NABL,JCI). Jaypee Brother Medical Publishers (P) Ltd, Delhi.	
2	*Arif Raza* , 2016. **Accreditation of Healthcare Organizations**. Jaypee Brother Medical Publishers (P) Ltd, Delhi	
Reference Books		
1	*Arun K.Agarwal* , 2019. **Standard Operating Procedure (SOP) for Hospitals in India**. Atlantic Publisher & Distributor Pvt.Ltd, 2nd Edition.	
2	*Sharon Myers*, 2011. **Patient Safety and Hospital Accrediation: A Model for Ensuring Success**. Springer Publishing Company Pvt.Ltd	

3	*S.K.Joshi* , 2014. **Quality Management in Hospitals**. Jaypee Brother Medical Publishers (P) Ltd, Delhi , 2nd Edition.
Related Online Contents [MOOC, SWAYAM, NPTEL, Websites etc.]	
1	Continuous Quality Improvement Tools and Techniques by Dr.Sanjeev Singh, Quality Circle of India
2	www.researchgate.net/publication/7595396_An_ISO
3	https://www.medvarsity.com/courses/certificate-course-on-nabh-accreditation-standards-for-hospitals/
Course Designed By: Dr.S.Mohan	