

**MASTER'S DEGREE IN HOSPITAL MANAGEMENT  
(CBCS SYSTEM)**

**REVISED ACADEMIC REGULATIONS  
COURSE STRUCTURE AND SYLLABUS  
WITH EFFECT FROM  
2023-24**



University with potential for Excellence  
(Accredited by NAAC A+ Grade)  
Category Graded Autonomy by UGC

**FACULTY OF MANAGEMENT  
DEPARTMENT OF BUSINESS MANAGEMENT  
OSMANIA UNIVERSITY  
HYDERABAD - 500007**

Affiliated to Osmania University and approved by AICTE

# REVISED SYLLABUS OF MASTER'S DEGREE IN HOSPITAL MANAGEMENT (CBCS SYSTEM)

(To be effective from the academic year 2023-24)

I. The Master's Degree in Hospital Management (MDHM) is a two year post-graduate program offered by: (i) Apollo Institute of Hospital Administration and (ii) Department of Hospital Management of Deccan School of Management, both the institutions are affiliated to Osmania University and approved by AICTE.

## II. ADMISSION

A candidate seeking admission into the program must satisfy the following criteria: i). Must possess a graduate degree of any university treated as equivalent in medical and non-medical field with 50% aggregate (45% for SC and ST candidates). (ii) Must have qualified in the entrance test, conducted by the Convener, Osmania University in the year of the admission. The marks based on Entrance test are considered for the preparation of the merit list.

Candidates will be allotted to the course strictly depending on the merit secured at the entrance test, and subject to the rules and regulations in force from time to time including the reservations in vogue in Osmania University.

No admission / readmission / promotions are to be made after the expiry of four weeks from the date of commencement of instruction.

**Duration and Course of the Study:** The duration of the course is four semesters of theory and practicals. Each semester shall comprise 14-16 weeks of instruction.

No supplementary or any other examination shall be conducted during the instruction period of the semester.

A candidate admitted to the MDHM course will forfeit his / her seat and admission stands cancelled if: He / she fails to fulfil the requirement for the award of the degree as specified, namely, double the period of the course (i.e. complete the course within four academic years) from the time of admission into the course.

## III. AWARD OF DEGREE:

The MDHM degree will be conferred on a candidate who has pursued a regular course of study for two academic years as prescribed in the scheme of instruction and has passed all the examinations including dissertation and internship.

A regular course of study for eligibility to appear MDHM examination of a semester shall mean putting in attendance of not less than 75% aggregate in the subjects listed in the scheme of

instruction. Provided that, in specific cases and for sufficient cause shown, the Vice-Chancellor, on the recommendation of the Principal, may condone the deficiency not exceeding 10% in attendance on medical grounds when the application submitted at the time of the actual illness is supported by a certificate from an authorized medical officer, and approved by the Principal. In case of condonation in attendance on medical grounds the applicant shall pay the prescribed fee.

#### **IV: SCHEME OF INSTRUCTION AND EXAMINATION**

Instruction for various subjects shall be provided by the college as per the scheme of instruction and syllabus prescribed.

The program of instruction, examination and vacations shall be notified by the university. At the end of each semester, university examinations shall be held as prescribed in the scheme of examination.

Backlog examinations shall be conducted only at the end of the semesters II and IV.

A student shall be deemed to have passed the semester examination if he/she secures not less than 40% marks in each paper.

#### **The evaluation of the following will be done by a Committee:**

- i) Hospital Visits (Report & Presentation):
- ii) Project Work (Report & Presentation):
- iii) Dissertation & Viva-Voce:

These are {i.e. i), ii), iii)} are evaluated on a grading system of A, B, C, D and E as per university norms by a committee. The committee will consist of:

- a) Chairman, BOS in Business Management or his/her nominee as the Chairman.
- b) One Professional Hospital Administrator / Health Care Consultant / Health Care Academician as member
- c) Principal or his/her nominee of the concerned college as Convener.

Grading will be done in the following manner

70 marks & above – Grade A  
60 marks & above – Grade B  
50 marks & above – Grade C  
40 marks & above – Grade D  
Less than 40 marks – Grade E (fail)

The Internship at the end of IV Semester is compulsory and will be evaluated by the host administrator under whom the student worked for his Internship. The evaluation is on the

parameters designed by the university and a certificate from the host administrator that the candidate completed internship. The degree cannot be awarded until internship and other course requirements are fulfilled.

### **Internal Assessment:**

The pattern followed by the Osmania University for the internal assessment for the post graduate programs will be followed for this course also.

### **V: RULES OF PROMOTION:**

The rules of promotion are as under:

From semester I to semester II: Undergone a regular course of study of semester I and \*registered for the semester I examinations.

From semester II to semester III: A) Undergone a regular course of study of semesters I and II, and B) The number of backlogs, if any, of semester I and II taken together shall not exceed 50% of the total number of papers / subjects prescribed for semester I and II.

From semester III to semester IV: Undergone a regular course of study of semester III and registered for semester III examinations.

\* Registration means obtaining a Hall ticket for the said examinations.

### **VI: AWARD OF DIVISION**

Candidates who have passed all the examinations of the MDHM course shall be awarded divisions in accordance with the total aggregate marks secured by them in all the semester examinations taken together.

First Division with Distinction:	70% and above
First Division	60% and above but less than 70%
Second Division	50% and above but less than 60%
Pass Division	40% and above but less than 50%

Candidates who have not passed the examinations in the first attempt along with the batch in which they were admitted are not eligible for getting rank certificates, medals etc.

**OSMANIA UNIVERSITY**

**DEPARTMENT OF BUSINESS MANAGEMENT  
MASTERS DEGREE IN HOSPITAL MANAGEMENT  
CHOICE BASED CREDIT SYSTEM (CBCS)  
FIRST YEAR: 1<sup>st</sup> SEMESTER**

Course code	Course Title	Credits	HPW****	Max Marks (IA + UE)* 100	DESE#
101	Hospital Organisation and Management Theory	4	4	30 + 70	3hrs
102	Economic and Health Environment and Policy	4	4	30 + 70	3hrs
103	Accounting for Hospitals	4	4	30 + 70	3hrs
104	Statistics for Hospital Management	4	4	30 + 70	3hrs
105	Communication Skills in Health Care	4	4	30 + 70	3hrs
106	Human Biology and Medical Terminology	4	4	30 + 70	3hrs
107	Hospital Planning and Operations Management	4	4	30 + 70	3hrs
108	Hospital Visits	2	-	50	-
<b>Total credits at the end of I semester</b>		<b>30</b>	-	<b>750</b>	-

Note: (1) \* I.A.: Internal Assessment; U.E.: University Examination

(2) \*\* Hospitals Visits: 30 Marks  
Report: 10 Marks  
Presentation: 10 Marks

Hospital Visits: Students shall be taken on a visit to a minimum of 3 hospitals of different category, and spend around 30 hours which includes the visit time and the report writing time and presentations of the visits.

(3) \*\*\* Hours per week

(4) #Duration of End-Semester Examination

## FIRST YEAR: 2<sup>nd</sup> SEMESTER

Course code	Course Title	Credits	HPW	Max Marks (IA + UE) 100	DESE
201	Human Resource Management	4	4	30+70	3hrs
202	Marketing of Hospital Services	4	4	30+70	3hrs
203	Research Methodology for Hospital Management	4	4	30+70	3hrs
204	Health Economics	4	4	30+70	3hrs
205	Hospital Financial Management	4	4	30+70	3hrs
206	Patient Care Management	4	4	30+70	3hrs
207	Health Care Information Technology and Systems	4	4	30+70* (*50 UE + 20 Lab Practicals)	3hrs
208	Project work (Report and viva)** ** Total marks of 100 will be distributed as: 50 for the content of the project work report. 50 for the Viva / Presentation on the project work. And accordingly grade will be awarded	4	6 weeks (during summer vacation after semester II examination) – Live project in any healthcare organisation	100 (50 report + 50 viva)	-
<b>Semester credits</b>		<b>32</b>	-	<b>800</b>	-
<b>Total Credits at the end of II Semester</b>		<b>62</b>	-	<b>1550</b>	-

## SECOND YEAR: 3<sup>rd</sup> SEMESTER

Course code	Course Title	Credits	HPW	Max Marks (IA + UE) 100	DESE
301	Statutory and Regulatory Compliances	4	4	30 + 70	3hrs
302	Supply Chain, Logistics and Materials Management	4	4	30 + 70	3hrs
303	Total Quality Management	4	4	30 + 70	3hrs
304	Operations Research for Decision Making	4	4	30 + 70	3hrs
305	Health Innovations, Technology and Artificial Intelligence	4	4	30 + 70	3hrs
306	Entrepreneurship and Consultancy Management	4	4	30 + 70	3hrs
307	Health Insurance and Medical Tourism	4	4	30 + 70	3hrs
	Dissertation work tutorials	-	-	-	-
<b>Semester credits</b>		<b>28</b>	-	<b>700</b>	-
<b>Total Credits at the end of III Semester</b>		<b>90</b>	-	<b>2250</b>	-

## SECOND YEAR: 4<sup>th</sup> SEMESTER

Course code	Course Title	Credits	HPW	Max Marks (IA + UE) 100	DESE
401	Strategic Management	4	4	30 + 70	3hrs
402	Management Accounting and Control	4	4	30 + 70	3hrs
403	Healthcare Analytics	4	4	30 + 70	3hrs
404	Internship*	2	-	50	-
405	Dissertation**	2	-	50	-
406	Viva-Voce***	2	-	50	-
<b>Semester credits</b>		<b>18</b>	<b>-</b>	<b>450</b>	<b>-</b>
<b>Total credits at the end of IV semester</b>		<b>108</b>	<b>-</b>	<b>2700</b>	<b>-</b>

Note: \*Student shall undergo compulsory internship in any selected hospital for a period of four months and submit “Internship Completion Certificate” to the college.

\*\*During Internship student has to choose any topic and do a dissertation during that period

\*\*\*A Comprehensive Viva–Voce Examination will be conducted at the end of the fourth semester.



# 101. HOSPITAL ORGANIZATION AND MANAGEMENT THEORY

## Objective:

To familiarize the student with the basic concepts, principles and functions of management

## Unit I: Introduction to Management

Management: Meaning, Definition, Nature, Concepts and Significance of Management, Evolution of Management Thought, Principles of Management, Management Process, Managerial Skills, Levels of Management - Significance of Hospital Management - Responsibilities of a Hospital Manager - Transition Factors of Hospital Management (shift from professional to manager)

## Unit II: Functions of Management

**Planning:** Meaning, Types, And Process - Management by Objectives (MBO): Definition, Concepts, Process

**Decision-Making:** Meaning, Types, Models, Importance, Process and Decision Making Techniques - Overcoming Barriers to Effective Decision Making - Importance of Planning & Decision-Making in a Hospital – Applicability of MBO in Hospitals.

**Controlling:** Meaning, Characteristics of Effective Control Systems, Control Process, Methods of Control

**Coordination:** Meaning, Nature, Importance, Principles of Coordination, Types of Coordination, Techniques of Coordination. Application of Managerial Functions in a Hospital

## Unit III: Organizational Behavior and Group Dynamics

**Organizational Behavior:** Meaning, Historical Development, Nature, Factors Influencing, Importance and Models of Organizational Behavior.

Cognitive process, Perception and Attribution: Concept, Nature, Factors Influencing, Stages and Process, creativity and problem solving. Values and Attitudes, Personality – Stages of Personality Development, Determinants of Personality

**Group Dynamics:** Meaning of Group and Group Dynamics, Characteristics and Types of Groups, Theories of Group Dynamics

**Interpersonal Relationships:** Meaning, Significance, Analysis (Transactional Analysis and Johari Window)

**Contemporary Issues in OB:** Managerial Challenges - Workplace Challenges - Environmental Challenges - Global Challenges.

## Unit IV: Organizational Structure, Climate and Culture

**Organization Structure and Design:** Introduction, Concept, Nature, Principles, Nature, Types of organizational structures, Departmentation, Centralization and Decentralization, Formal and Informal Organizations, Factors Influencing the Choice of Structure, Line and Staff Relationships, Delegation of Authority, Span of Control, Designing Structure for a Service Organization.

**Organizational Climate:** Definition, Nature, Factors Influencing Organizational Climate, Dimensions of Organizational Climate, Developing a Sound Organizational Climate

**Organizational Culture:** Meaning, Nature, Factors influencing, Significance of Organizational Culture, Morale – Concept and Types of Morale, Distinction between Organizational Culture and Organizational Climate.

### **Unit V: Change Management, Conflict Management and Corporate Social Responsibility**

**Change:** Meaning, Need, Importance of Change, Factors contributing to Change, Change Agents.

Resistance to Change: Meaning, Causes of and Dealing with Resistance to Change

**Stress:** Meaning, Sources of Stress, Impact of Stress on the Performance, Stress Management Techniques, Managing Work Place Dimensions.

**Conflicts:** Meaning of Conflict and Conflict Management, Types of Conflict, sources of Conflict, Conflict Management Strategies.

**CSR:** Definition – Millennium Development Goals – Principles of CSR – Driving Forces of CSR – Dimensions of CSR – CSR towards Various Segments of Society – CSR in Hospitals: Issues and Standards, Trends, Green Strategies, Impact of CSR

#### **References:**

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McGraw Hill, New Delhi, 1998
2. James A.F.Stoner, : Management, Prentice Hall India, New Delhi, 1997.  
R.Edward Freeman and  
Denier R. Gilbert Jr
3. Kountz Harold, Heinz : Management – A global perspective, 19th edition, Mc Graw Hill  
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Delhi, 2000.
5. Koontz Harold, Heinz : Essentials of management, Mc Graw Hill International, New Delhi, 2004.  
Weihrich
6. L.M.Prasad : Principles and practice of Management, 6th edition, Sultan Chand  
Publisher, New Delhi, 2001.
7. Elaine L. : Management in Health care, Mc Millan publishers.
8. Manisha Saxena : Hospital Management, Volume – I, CBS Publishers and Distributers, 2013,  
New Delhi

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## 102. ECONOMIC AND HEALTH ENVIRONMENT AND POLICY

### **Objective:**

To provide the health care students valuable insights of economic environment of India, Indian health care delivery systems, Origin of Hospitals and their role, present standards and policy of health care delivery systems / hospitals.

### **Unit I: Economic Environment of India**

Economic Systems – Capitalism –Socialism – Mixed Economy–Mixed Economy in India – Economic Roles of Government (Regulatory, Planning, Promotional Roles) –Role of Private Sector–Business Environment (The economic, Political, Legal, Competitive, Socio-cultural and Demographic Environment) The Emerging Scenario – Liberalization Privatization and Globalization (LPG) Regime.

**Economic and Human Development** – Role of Natural Resources –Role of Economic & Non Economic Factors–The Human Development Index–Links between Economic Growth and Human Development–Burden of Population on Environment– Growth and Environmental Degradation– Impact of Health on the Economy –Economic Impact of ill Health on Households

### **Unit II: Evolution of Health Care services**

Health Care – Meaning and Scope – Overview of Health Care Delivery Systems in India and abroad – Current trends in Health Care delivery and the present scenario – Levels of health Care – Primary health Care in India – preventive medicine – Role of public health manager – Government health services – Developments in public sector health Care delivery systems – Private health services, GDP & GNP expenditure on health -- Origin and growth of Corporate Philosophy – Comparison of public sector and private sector health care delivery systems.

### **Unit III: Basic Health Concepts**

Definition and dimensions of Health – Indicators of Health – Concept of disease and Disease Causation– Natural history of Disease – Concept of Disease Control – Levels of Prevention – Models of Disease intervention – International Classification of diseases – Mortality and Morbidity Rates – Common Diseases – Principles and Practices of Epidemiology – Millennium Development Goals.

### **Unit IV: Health Care Policies**

Environment Policy in India and Global Concerns – National Population Policy 2000 – Family Planning / Welfare Concepts – National Family Planning Program and Population Control Measures – National Health Mission (NHM) - National Health Policy 2002 & 2017 - High Level Expert Group (HLEG) on Universal Health Coverage (UHC) - National Rural Health Mission (NRHM) / National Urban Health Mission (NUHM).

## **Unit V: Environmental Health Hazards**

Environmental Health and Pollution- Nature, Sources, Health Effects- Burden of population on Environment-Pollution and Pollution Control-Hazardous Material and Waste Management- Occupational Hazards.

### **References:**

1. G. E. Alan Dever : Epidemiology in Health Services Management, Aspen Publication, Mary land, 1984.
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3. S. L. Goel : Health Care Systems and Managements; Primary Health Care Management, Deep & Deep Publications, New Delhi, Vol.4, 2001.
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6. Ajay Mahal, Bibek Debroy : India Health Report 2010, Business Standard Publishers
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8. Dutt & Sundaram : Indian Economy, S. Chand Publishers.
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12. A. V. Srinivasan (ed) : Managing A Modern Hospital, Response Books, New Delhi, 2000
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17. [www.hss.litm.ac.in](http://www.hss.litm.ac.in) : Govt. Health Expenditure in India
18. Manisha Saxena : Hospital Management, Volume-3, CBS Publishers and Distributors, New Delhi, 2018

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## 103. ACCOUNTING FOR HOSPITALS

### Objective:

To provide an understanding of the basic principles and processes of accounting system in hospitals

### Unit I: Accounting Frame Work

Scope – Role of Accounting – Accounting as an Information system – Role and Activities of an Accountant – Accounting Conventions and Concepts – Accounting Standards – IFRS – Branches of Accounting – Principles of Double Entry System – Journal – Ledger – Preparation of Trial Balance.

### Unit II: Construction of Financial Statements

Types of Financial Statements – Profit and Loss Account and Balance Sheet - Preparation of Financial Statements for Sole Proprietor

### Unit III: Accounting for Non-Profit Organizations

Features- Books to be Maintained - Receipts and Payments Account - Income and Expenditure Account-Preparation of Final Accounts for Hospitals and Not for Profit Organizations.

### Unit IV: Company Accounts- An Introduction

Meaning and Definition of a Joint stock Company – Characteristics – Promotion - Kinds of Companies - Shares Vs Debentures – General Requirements - The Companies Act, 2013 – Company Final accounts (Theory only with formats)

### Unit -V: Accounting Packages and Tally ERP.9 – Hands on experience

### References:

- 1) Maheswari, S.N., An Introduction to Accounting, Vikas publications, New Delhi.
- 2) Horngren, C.T., Gary L. Sundem, Introduction to Management Accounting, Prentice Hall India, New Delhi.
- 3) Grewal, T.S., Introduction to Accountancy, S. Chand & Co, New Delhi, 2009.
- 4) Boynton C.D., Robert M.S., Paul. A.C, Hamden C. Forkner, Accounting, South western Publishing Co., Cincinnati.
- 5) Rickettsdon, Jackgrey, Managerial Accounting, Houghton Mifflin Company, Boston.
- 6) Anthony A. Atkinson, Robert S. Kaplan and S. Mark Young, Management Accounting, Pearson Education Pvt. Ltd., Singapore
- 7) Jain, S.P., Narang .K.L., Financial Accounting, Kalyani Publishers, Ludhiana.
- 8) Jawaharlal, Seema Shrivastava – Financial Accounting – Himalaya Publishing House. 2012.
- 9) Tulsion PC – Accountancy – Tata Mc Graw Hill.
- 10) Tally Prime

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## 104. STATISTICS FOR HOSPITAL MANAGEMENT

### Objective:

This subject intends to familiarize the student with basic statistical techniques and the use of inferential statistics in analyzing quantitative data in the Health Care Systems.

### Unit I: Collection and Presentation of Data

Statistics – Meaning – Characteristics – Advantages & Limitations, Distrust of Statistics – Quantitative Decision Making – Meaning – Statistics and Operations Research – Various Statistical Methods – Advantages of Quantitative approach to Management – Quantitative Techniques in Business and Management

### Unit II: Analysis of Data – Averages

**Measures of Central Tendency:** Mean Median, Mode and Quartiles – Relationship among Mean, Median and Mode.

**Measures of Variation and Skewness:** Significance – Properties of Good Measure of Variation – Range, Quartile Deviation – Standard Deviation – Absolute and Relative Measures of Variation – Standard Deviation – Karl Pearson & Bowley's skewness – Relative Skewness. (Simple Problems)

### Unit III: Probability and Probability Distributions

**Probability:** Basic Concepts – Experiment, Sample Space, Event – Approaches to Probability Theory – Addition and Multiplication Theorems – Mathematical Expectation.

**Probability Distributions :** Important Discrete Probability Distributions – Binomial & Poisson – Basic Concepts – Normal Distribution – Applications of Normal Distribution in Hospital Environment.

### Unit IV: Statistical Estimation and Hypothesis Testing

**Statistical Estimation:** – Properties of Good Estimation – Point and Interval Estimation.

**Testing of Hypothesis:** – Introduction – Basic Concepts – Hypothesis Testing Procedure – large & small samples – Testing of Population Mean, Proportion – Testing of Difference between Means – Testing for Difference between Proportions. Paired 't' - Test.

**Chi-square Test:** Introduction – Testing the Goodness of Fit – Testing of Independence of Categorized data.

**Analysis of variance:** one way and two way classification

### Unit V: Correlation and Forecasting Methods

**Correlation:** – Meaning – Types – Methods of Measuring Correlation – Karl Pearson and Spearman, Rank correlation – Probable Error – Coefficient of Determination – Association of Attributes.

**Regression:** – Introduction – Regression Lines – Regression Equations.

**Time Series Analysis:** – Introduction – Components – Decomposition – Methods of estimating and forecasting straight line trend – Utility of time series analysis.

## References:

1. O.R Krishna Swamy & D.Obul Reddy : Research Methodology and Statistical Tools, Himalaya Publishing House, Bombay, 2012.
2. Gupta S.P. : Statistical Methods, Sultan Chand, New Delhi.
3. Prof. D. Obul Reddy & Prof. V. Usha Kiran : Business Statistics – I, Professional Books Publisher, Hyderabad
4. Prof. D. Obul Reddy & Prof. D. Shreedevi : Business Statistics – II, Professional Books Publisher, Hyderabad
5. B.K. Mahajan : Methods of Biostatistics, Jaypee Brothers, Bangalore.
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13. S.P. Rajagopalan & R, Sattanatham : Business Mathematics, *Vijay Nicole Imprints Pvt. Ltd.* Chennai.
14. Adil H. Mouhammed : Quantitative Methods for Business and Economics, Prentice Hall of India New Delhi.
15. S.P.Gupta & M.P.Gupta : Business Statistics, Sultan Chand, New Delh
16. K.S.Negi : Biostatistics, A.I.TB.S. Publishers, New Delhi, 2008.
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Periodicals: Health Information of India, Government of India. Hospital Information Review



## 105. COMMUNICATION SKILLS IN HEALTHCARE

**Objective:** To provide an exposure to the fundamentals of communication, help them to improve verbal, written and non- verbal communication skills and transform soft skills.

### **Unit – I: Fundamentals of Communication**

Meaning and Nature of Communication- Objectives- Importance- Communication Process- Functions- Special characteristics of Health Communication- Miscommunication and its effects in Healthcare- Principles of effective communication

### **Unit- II: Communication Channels and Types**

Formal and Informal Communication- Verbal and Non verbal Communication- Oral Communication: Importance; Channels; Factors affecting Oral Communication; Essentials; Feedback in Oral Communication; Styles; Privilege and Defamatory Speech- Written Communication: Principles; Media of Written Communication; Merits and Demerits of Written Communication- Grapevine

### **Unit – III: Presentation Skills and Report Writing**

Oral Presentation: Meaning; Importance; Types; Tools; Methods- Steps in Presentations- How to improve Presentation Skills  
Report Writing: Features; Purpose of Reports; Types; Characteristics of Good Report; Principles of Writing Reports.

### **Unit – IV: Soft Skills in Communication**

Listening: Concept ; Importance; Types of Listening; Process of Listening; Guidelines to effective Listening- Cross Cultural Communication: Meaning; Problems; Overcoming Cross Cultural Communication Barriers- End of Life Communication: Meaning; Importance; Goals of Communication at EOL; Barriers ; Preparation and Approach to EOL Communication- Therapeutic Communication and Behavioral Management

### **Unit – V: Technology and Communication**

SMS- MMS- Web Based Communication- E-mail- Teleconferencing-Video Conferencing- Social Media- Aids of Visual Communication: Advantages and Disadvantages- Functions of Mass Media- Electronic Media( TV and Radio)- New Media of Internet.

### **References:**

1. Gwen Marram Van Servellen, Communication Skills for the Health Care Professional: Concepts and Techniques, Aspen Publishers Inc., Maryland.
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18. Diane Bonet Romero (2009), The Business of Listening: Become a More Effective Listener, 4/e, USA: Axzo Press.
19. Barry Cusack and Sam McCarter (2007), Listening and Speaking Skills, Oxford: Macmillan Education.

## 106: HUMAN BIOLOGY AND MEDICAL TERMINOLOGY

**Objective:** To enable students to understand the function and importance of different systems of human body. To familiarize the students with the medical terminology used in the hospital sector.

### Unit- I: Basics of Anatomy and Physiology

Significance of Anatomy and Physiology in Hospital Administration- Anatomy: Meaning; Classification of Anatomy; Terms used in Anatomy (various positions, planes, terms in relation to various regions and movements) - Physiology: Meaning; Applied Physiology; Terms Used in Physiology

### Unit – II: Different Organ Systems

Nervous System: Anatomy and Physiology; Reflexes; Brain; Cranial and Spinal Nerves  
Muscular System: Anatomy; Different types of Muscles; Physiology; Muscle Contraction; Maintenance of Posture  
Skeletal System: Anatomy; Different types of Bones; Physiology; Movements of Bones and Joints  
Cardio- Vascular System: Anatomy of Heart and Blood Vessels; Physiology of Blood; Functions of Blood;  
Respiratory System: Anatomy and Physiology; Mechanics of Respiration  
Digestive System: anatomy and Physiology; Common Digestive Disorders  
Genito- Urinary System: Anatomy and Physiology ; Functions of kidneys ; Male and Female Reproductive System; Fluid Electrolyte Balance  
Sense organs and Endocrine System: Skin ; regulation of Body Temperature; Physiology of Lymphatic and Immunological System; Glands; Types; Physiology and Applications of Different Hormones

### Unit- III: Basics of Microbiology, Immunology and Pathology

Classification of Micro Organisms- Bacteria: Types, Culture, Common Bacterial infections- Virus: Types, Common Viral Infections- Protozoa: Types, Common Protozoa infections- Collection and Transport of specimens for Microbiological Examination- Bio Safety Guidelines- Immunity- Antigen Antibody reactions- Rapid Diagnostic Tests in Microbiology- Histo-Pathology- Gross Pathology- Clinical Hematology, FNAC- Biopsy and Autopsy

### Unit- IV: Human Genetics and Human Nutrition

Genetic Differences and Inheritance patterns- Genomics- Population Genetics- Current trends in the field of Genetics- Essential nutrients in food-Food security ; Risks- Malnutrition and its consequences- Nutrition for special populations- Nutrition Policy ; Interventions

### Unit –V: Roots, Prefixes, Suffixes and Abbreviations

Roots of the bodily concepts-Roots of the body parts and substances-Roots of color-Roots of position-Roots of description- Prefixes of quantity or amount-Suffixes- Abbreviations: Departments-Routes of medication-Laboratory

### References:

1. Dr. Vishwanath Buddolla, 'Anatomy, Physiology and Microbiology', Florence Publishers, Hyderabad.
2. B D Chaurasia, 'Human Anatomy', CBS Publishers and Distributors Pvt Ltd, New Delhi.
3. Inderbir Singh, 'Anatomy and Physiology', Jaypee Brothers Medical Publishers (P) Ltd, New Delhi.
4. Dr. A K Jain, 'Anatomy and Physiology', Arya Publications, Sirmour.
5. Bonnie F. Fremgen, Suzanne S. Frucht, 'Medical Terminology: A living language', pearson, New York.
6. David Anderson, 'Medical Terminology', independently published.
7. Ann Ehrlich, Carol L Schroeder, 'Medical Terminology for Health Professions', Cengage Learning, Boston
8. [https://en.wikipedia.org/wiki/List\\_of\\_medical\\_roots,\\_suffixes\\_and\\_prefixes](https://en.wikipedia.org/wiki/List_of_medical_roots,_suffixes_and_prefixes)

## 107. HOSPITAL PLANNING AND OPERATIONS MANAGEMENT

### **Objective:**

The objective of this course is to familiarize the students with the planning and execution of health Care delivery system, to provide an overview of health services vis.-a-vis. hospital design, planning and operational aspects of hospital organization. To familiarize the students with basic concepts of hospital operations and various tools of productivity

### **Unit- I: Management of Hospitals**

Evolution of Hospitals - History of Hospitals - Changing Concepts of Hospitals - Types and Classification of Hospitals - Clean & Green Hospitals. Introduction to Operations Management: Meaning and Scope – Role and Decisions – Difference of Hospital Operations from Other Service and Manufacturing Organizations. Meaning and Rationale of Hospital Administration - Role of Hospital Administrator - Hospital as a System - The Changing Role of Hospitals in Health Care

### **Unit II: Hospital Architectural Planning and Designing**

Conception of the Idea – Community Wide Planning – Area Wide Planning – Determining the Size and Kind of Services to be provided – Guiding Principles in planning hospital facilities and services, Selection of Site – Planning of hospital building.

Principles and planning parameters – Scope of the Project, role of hospital consultant and Architect – Functional Development – Conceptual Designing, Working Drawings, Tender & Bid documents, legal formalities – Environmental Regulations and Accreditation Standards.

Equipment Installation–Commissioning–Shakedown Period– Bottlenecks–Scope for Future Expansion

### **Unit III: Hospital Functional Planning**

Flow and area analysis – inter departmental relations– departmental and room functions– standard room– bed distribution, space requirements –developing a move sequence.

**Planning for Medical Specialties:** An over view of – Oncology –General Medicine – Cardio – Thoracic , Gastroenterology – Urology – Nephrology – Radiology – Psychiatry – Endocrinology – Neurology – Ophthalmology – Dental Services – Maternity Services – Accident and Emergency Services etc. – Out Patients and Day – Care Services – Inpatient Nursing Units – Intensive Care Units – Operation Theaters.

### **Unit IV: Planning for Supportive Services and Outsourcing**

Standards for designing hospital facilities – mechanical, electrical centralized medical gas system – safety, security, fire hazard, infection control, disaster management considerations in planning.

**Planning and designing supportive services:** An over view of– Diagnostic Services, Clinical Laboratories, Radiological Services– Medical Records– Front office– billing– staffing– housekeeping– transportation– Ambulance – Engineering & maintenance– laundry– dietary services– Administrative– services such as HRD, Accounts, Marketing department. Space requirements – Equipment planning. Concept of out-sourcing, need, advantages and disadvantages - Areas of out sourcing – Structure of Out sourcing Projects – managing innovation for value creation and better satisfaction of Patients and attendants

## **Unit - V: Health Care Operations Management**

**Operations Management in Hospitals:** Hospital Process: Input, Process, and Output – OM Goals in Hospitals - Parts of OM (Gap Analysis, Process Improvement, and Implementation) – Challenges in OM of Hospitals – How to make OM Effective in Hospitals / Operations Strategy.

**Productivity:** Concepts – Scope – Objectives - Factors – Types - Techniques of Productivity Measurement – How to Improve Productivity in Hospitals.

**Work Study & Value Analysis:** Work Study: Meaning; Purpose; Techniques / Methods; Importance of Work Measurement in Hospitals – Value Analysis: Meaning; Objectives; Steps; Techniques; Application of VA in Hospitals.

### **References:**

1. Kunders G.D , Facilities Planning and Arrangement in Health Care Prison Books Pvt. Ltd. Bangalore, 2004
2. Joshi DC, Mamta Joshi, Hospital Administration, (Jaypee Brothers Medical Publishers P. Ltd., New Delhi)
3. Syed Amin Tabish, Hospital and Health Services Administration Principles and Practice (Oxford University Press, New Delhi) References
4. Sakharkar B.M, Principles of Hospital Administration and Planning (Jaypee Brothers Medical Publishers Pvt. Ltd., New Delhi)
5. Kunders G.D, Designing for Total Quality in Health Care (Prism Books Pvt. Ltd., Bangalore) 546 Textbooks
6. Shakti Gupta, Sunil Kant, Chandra Sekhar, Sidharth , Modern Trends in Planning and Design of Hospitals, Jaypee Brothers, New Delhi.

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## 108. HOSPITAL VISITS (REPORT & PRESENTATION)

### **Objective:**

To provide a basic understanding of various types of hospitals; their method of working, physical layouts, working conditions

### **Pedagogy:**

Students to be on visit for at least 3 different hospitals. (Govt. Hospitals, Trust Hospitals, Single Specialty Hospitals, Super Specialty / Corporate Hospitals, Nursing Homes, etc.)

Evaluation – 100 marks / grade – Attendance / Report writing / Presentation of reports.

### **UNIT I**

Introduction to hospitals and health care facilities – Different types of hospitals.

### **Unit II**

Description of functions of each facility.

### **Unit III**

Visit to various hospitals (3 to 5) guided by a faculty.

- 1) Brief introduction given by Host Hospital Administrator / Medical Superintendent about the history and functioning of hospital.
- 2) Students tour the hospital and visit various departments.
- 3) Students note down the salient features of each department they visit and prepare individual reports.

### **Unit IV**

A structured report has to be presented by the students in teams on each hospital visit and one consolidated report by compiling all individual reports on that hospital.

### **Unit V**

Viva voce exam by 3 member committee comprising of university nominee, hospital expert and principal of the college and marks are awarded on grading system.

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## 201. HUMAN RESOURCES MANAGEMENT

### **Objective:**

To provide understanding of concepts, principles and practices of human resource management and to appreciate the need for the systematic approach to people management to achieve organizational goals

### **Unit I: Introduction to Human Resource Management**

Changing Environment of Human Resource Management – Organization of Human Resource Department, Image & Qualities of Human Resource / Personnel Manager, Personnel Policies & Principles – Nature of HR in hospitals, Objectives of HR in hospitals, Strategic Human Resource Management.

### **Unit II: Human Resource Planning**

Meaning & Definition, Importance, factors affecting, Barriers, Forecasting – Job analysis & Job Design: Nature, Methods of collecting information, Job Description, Job Specification, Factors affecting job design, Techniques of Job Design – Recruitment & Selection: Meaning, Definition, Purpose and Importance, Factors governing, Process, Barriers, HRM and Competitive Advantage, Sources of Recruitment, Selection – Objectives, Procedure, Types of Selection Tests.

### **Unit III: Orientation and Training, Motivation and Leadership**

Orientation program, Problems in Orientation –Training: Nature, Types, Training process, Impediments to effective Training, Training Need Analysis, Training methods, Executive Development Programme, Job Stress – Promotions, Transfers and Separations.

**Motivation:** Meaning, Concept, Factors influencing, Importance and Theories of Motivation.

**Leadership:** Meaning, Concept, Authority, Power & Influence, Characteristics, Theories and Styles of Leadership, Transactional Leadership, Transformational Leadership, Recent Trends in Leadership, Managerial Grid, Leadership Continuum and Leadership Effectiveness, Successful Versus Effective Leader.

### **Unit IV: Performance Appraisal and Compensation**

**Performance Appraisal:** Definition, Importance, Need to appraise, Process, Appraisal Methods: past oriented and Future Oriented, Appraisal Interview, Errors in Appraisal, Competency Mapping, Job Evaluation.

**Career Planning & Development:** Definition; Factors affecting CPD; Individual & Organizational CP; Career Paths; CPD Methods – Succession Planning.

**Employee & Executive remuneration & Compensation:** Components of remuneration, Influences on pay determination. Devising a remuneration plan, challenges affecting, remuneration, Wage policy in India –Incentives, develops effective incentive plans. Types of Incentive schemes, Benefits & Services: Meaning & definition, types, principles of fringe benefits, insurance, medical, retirement benefits.

### **Unit V: Employee Welfare and Industrial disputes**

**Employee Welfare:** Meaning & Definitions, Merits & Demerits, and Types of welfare activities, Approaches – Safety &Health: types of accidents, what causes accidents, how to – prevent accidents, Need for safety



**Disciplinary Procedure:** Discipline - Concept, Determinants, Process, Issue of charge sheet, Consideration of explanation, Notice of enquiry, Suspension, Enquiry, Punishment

**Industrial Disputes & Grievance Handling:** Framework for employer-employee relations, Grievance procedure, principles and guidelines for grievance handling-Trade Union: Need and Impact of trade union in India. Causes of industrial disputes, remedial measures – Collective bargaining: process, pre-requisites of collective bargaining.

**HR: Latest Trends** - Employee Engagement, Employee Retention, Work-Life Balance.

**References:**

1. Syed Amin Tabish : Hospital and Health Services Administration – Principles and Practice, Oxford University Press, New Delhi, 2001.
2. Dessler, Gary : Human Resource Management, Prentice Hall of India, New Delhi, 2000.
3. Beardwell. Ian & Holden. Len : Human Resource Management, MacMillan India ltd, New Delhi, 1996.
4. Ashwathappa K., : Human Resource & Personal Management, Tata McGraw – Himalaya Publishing Company Ltd, New Delhi, 2006.
5. Srivasatava S C : Industrial Relations, Tata McGraw – Hill Publishing Company Ltd, New Delhi, 2001.
6. Monappa, Arun, : Industrial Relations, Tata McGraw – Hill Publishing Company Ltd, New Delhi, 2000.
7. DeCenzo, A David, Robbins P Stephen. : Personnel / Human Resource Management, Prentice Hall of India Pvt. Ltd, New Delhi, 1999.
8. Subba Rao P. : Essentials of Human Resource Management. and Industrial Relations, Himalaya Publishing House, 2007.

## 202: MARKETING OF HOSPITAL SERVICES

### Objective:

The main objective of this course is to enable the students to understand the basic functions, principles and concepts of marketing and their application in Healthcare organizations

### Unit- I: Marketing: An Introduction and Services Marketing

Market and Marketing: Meaning and Definition - Evolution of Marketing – Difference between Marketing and Selling – Concepts of Marketing - Marketing Environment- Emerging Trends in Marketing - Characteristics of Services and Services Marketing – Elements of Service Marketing Mix - Importance of Marketing to healthcare organizations– Challenges in Practicing Marketing in Healthcare Industry.

Digital Marketing: Introduction, website planning & creation, Search Engine Optimization (SEO), Social Media Optimization (SMO), Search Engine Marketing, web analytics, Digital media planning and buying, Web marketing, Email marketing, mobile marketing, video marketing, Ad sense & Affiliate marketing, on page optimization & off page optimization.

### Unit-II: Marketing Planning and Organization

Concept of Market Segmentation – Need for Market Segmentation for hospitals– Bases for Market Segmentation for hospitals– Market Segmentation Process - Target Marketing: Meaning – Types of Target Marketing Strategies - Positioning: Meaning; Product Position Vs Brand Position; Qualities of a Successful Positioning.

Meaning of Marketing Organization – Importance of Marketing Organization for Hospitals - Principles of Designing Marketing Organization – Types of Marketing Organizations – Factors Affecting Marketing Organization.

Marketing Research – Meaning, Importance, Nature and Scope – Marketing Research Procedure – Application of Marketing Research – Problems in Conducting Marketing Research – Use of Technology in Marketing Research – Marketing Information System (MKIS) – Concept and Importance – Difference between Marketing Research and MKIS – Components of MKIS - Advantages of MKIS.

### Unit- III: Consumer Behavior and Customer Relationship Management

Meaning and Importance – Classification of Consumers – Factors influencing Consumer Behavior - Levels and Process of Consumer Decision Making – Types of Purchase Decisions in Health care – Understanding Customer Expectations of Services - Service Quality and its Dimensions - Building a Service Brand – Customer/Patient Loyalty – Loyalty pyramid - Meaning and Definition of CRM– Evolution – Objectives of CRM for hospitals –Principles of CRM for Hospitals– CRM Process for Hospitals – CRM Models for Hospitals- Benefits and Limitations of CRM.

### Unit- IV: Product Concepts and pricing Strategies

Product : Meaning and Levels - Classification of Products – Product Line and Product Mix Decisions in a Hospital – Service Life Cycle Decisions – New Service Development in a Hospital – Service Portfolio Strategy – Branding Services – Branding Decisions- Packaging, Purpose and Functions – Labeling Hospital Products

Pricing : Meaning and Definition - Pricing Policy: Meaning and Objectives - Factors Influencing Pricing Decisions in Healthcare- Procedure for Price Determination- Pricing Concepts and Strategies- Promotional Pricing - Dynamic Pricing - Responding to Price Changes – Present and Future Situation

### **Unit- V: Distribution Channels and Place Strategy**

Concept of Distribution – Classification of Channels of Distribution - Distribution Strategies - Physical Distribution - Channel Mix - Channel Design and Channel Choice – Factors Affecting Choice of Distribution Channels - Channel Conflict - Conflict Resolution Strategies – Importance of Location for Hospital Services – Strengthening Referral System – Market Expansion Strategy

Personal Selling : Meaning and Significance; Required Skills for Good Sales Personnel in Healthcare Organizations ; Steps involved in Personal Selling - Sales Promotion: Nature, Scope, and Objectives; Decisions in Sales Promotion: Sales Promotion Practices in Healthcare Organizations –Advertising in Healthcare Industry - Public Relations: Meaning and Functions – Publicity: Meaning; Advantages and Disadvantages.

#### **References:**

1. Kotlar, Philip, Marketing Management, Prentice Hall, New Delhi.
2. Stanton, Etzel, Walker, Fundamentals of Marketing, Tata-McGraw Hill, New Delhi.
3. Saxena, Rajan, Marketing Management, Tata-McGraw Hill, New Delhi.
4. McCarthy, E.J., Basic Marketing: A managerial approach, Irwin, New York.
5. Philip Kotler, 'Marketing Management', (2016), Pearson India Education Services Pvt. Ltd. New Delhi.
6. Ramaswamy and Namakumari, 'Marketing Management', (2013), Sage Publications India Pvt. Ltd., New Delhi.
7. 'The Nature and Determinants of Customer Expectations of Service', 'Journal of the Academy of Marketing Science', (1993) vol. 21, pp.1- 12
8. Johnston R., 'The Determinants of Service Quality: Satisfiers and Dissatisfiers', 'International Journal of Service Industry Management', (1995) vol. 6, no. 5, pp. 53-71.
9. Parasuraman. A., Zeithaml V. A., Berry L.L., 'SERVQUAL: A Multiple Item Scale for Measuring Consumer Perceptions of Service Quality', 'Journal of Retailing', (Spring, 1988) Vol. 64, No.1, pp. 12-37
10. Levitt, T., 'Marketing Intangible Products and Product Intangibles', (1981), Harvard Business Review, May- June, pp. 94-102.
11. Lovelock, C.H., 'Classifying Services to Gain Strategic Marketing Insights', 'Journal of Marketing', (1983), Vol.47, summer, pp. 9-20

## **203. RESEARCH METHODOLOGY FOR HOSPITAL MANAGEMENT**

**Objective:** This subject instils in the students the scientific temper that adds to their analytical understanding of the realities in Hospital and Health Care Environment and provides inputs for problem solving.

### **Unit-I: Overview of Research**

Introduction to Research, Meaning of Research, Types of Research, Research Process, Problem definition, Objectives of Research, Research questions, Research design. Problem Formulation, Conducting Literature Review. Difficulties in conducting health care research

### **Unit – II: Methods of Research**

**Qualitative Research Methods:** Introduction to qualitative research; steps in planning, designing and conducting qualitative research; Methods of qualitative research- interview , focus groups, observation and structured methods; Integrated approach of research. Qualitative research data management – field notes, recording, observation in hospital based studies vis-a-vis process mapping and re-engineering, work study, hospital ethnography, grounded theory approach in hospitals, Case Study, sampling techniques;

**Quantitative Research Methods:** Variables, Hypothesis and its testing, Measurement, Types of data and scales, Sample, Sampling Techniques;

Integrated Approach of Research: Combining qualitative and quantitative research approaches. Approaches to Research Exploratory vs Confirmatory Research, Experimental vs Theoretical Research.

### **Unit – III: Data Collection tools and techniques and Data Presentation**

Meaning and importance of data, sources of data, Tools and techniques of collecting Primary data; Observation, Experimentation, Interviewing, Questionnaire, Interview schedule, Checklist, Projective technique, SPSS. Reliability and Validity of instruments. Sources of secondary data and its uses.

Measurement and Scaling Techniques.

Presentation of data – Editing, coding, classification, Tabulation, Graphic and diagrammatic Presentation of data.

### **Unit-IV: Data Analysis and Interpretation**

Multivariate Analysis: Narrative and content analysis, coding, analysing – Conjoint Analysis – Discriminant Analysis - Factor Analysis – Cluster Analysis – Multi Dimensional Scaling – Role of computers in Health Care Research.

Hypothesis: Meaning – Types – methods of testing hypothesis – Logical & Statistical methods.

Interpretation: Essentials for interpretation – Precautions in interpretation – conclusions and generalization – statistical fallacies – objectivity in interpretation.

Ethical issues in conducting healthcare research.

## **Unit – V Report Writing**

Introduction, Types of Reports, Research Report Format, Referencing, Bibliography, foot notes , indexing and abstracting, citation indexes

Preparation of Dissertation and Research Papers, Tables and illustrations, Guidelines for writing the abstract, introduction, methodology, results and discussion, conclusion sections of a manuscript.

### **References:**

1. OR Krishnaswamy and D. Obul Reddy, Research, (2012): Methodology and Statistical Analysis (Text and Cases) Himalaya Publishing House,
2. Saxena, Manisha (2016) : Hospital Management Volume-2 , CBS Publishers & Distributors Pvt. Ltd. New Delhi.
3. Kothari, C.R. (1985). Research Methodology: Methods and techniques. Willey Eastern Ltd., New Delhi.
4. DK Lal Das (2013) : Approaches to Social Science Research Methods, New Royal Book Company, Lucknow.
5. William J. Goode & Paul K. Hatt (1981): Methods in Social Research, Mc Graw Hill Book Company.

## 204. HEALTH ECONOMICS

**Objective:** The primary aim of this subject is to provide a clear, concise introduction to micro and macro economics in general and economics as applied to hospital and health care sector in specific. The student will also be exposed to demand, supply and cost analysis in health care apart from Indian health care markets and models

### **Unit – I: Introduction to Health Economics**

Economics – An Introduction: Definition, and Scope of Economics - Micro and Macro Economics - Positive and Normative Economics – Scarcity - Opportunity Cost - Discounting Principle - Concept of Marginal Utility.

### **Unit - II: Health Economics: Concept, Nature and Areas**

Health Economics: Concept, Nature and Scope - Health Economics and Health Care Economics - Areas of Health Economics.

Health and Economic Development - Circular Flow and Interdependency of Economic Activity - Health Economics and Health Care Policy

### **Unit –III: Demand and Supply Analysis in Healthcare**

Law of Demand - Demand for Healthcare - Elasticities of Demand in Health Care - Michael Grossman Model of Demand for Health Care - Measurement of Demand in Health Care Forecasting. Concept of Supply - Sources of Supply in Health Care - Supply of Health Care Personnel - The Hospital Industry – Health Care Demand and Supply Gap.

### **Unit –IV: Cost Analysis and Valuation of Health Care**

Cost Concepts and Cost Analysis – Concepts of Health Care Costs - Externalities in Health Care – Valuation of Health –Economic Evaluation in Health Care - Cost of Infections – Cost of Poor Quality – Preventive Vs Curative Cost. Economics of Chronic Diseases: Heart Failure – Renal Failure – Life Style Diseases.

### **Unit –V: Healthcare Markets and Models**

Market Structure: Nature and Characteristics of Health Care Markets – Perfect Vs Imperfect Markets – Price Determination under Different Market Conditions. Market Intervention: Market Failure for Health Goods – Public Goods – Failure of Health Insurance – Government Intervention and Regulatory Framework. Health Care Models: The Beveridge Model: Nationalized Health Care – The Bismarck Model: Social Health Insurance – The Indian Model: Availability, Accessibility and Affordability of Health Care – Ageing Population and Future of Health Policy – Public-Private Partnership Models.

### **References:**

1. Jay Bhattacharya, Timothy Hyde, Peterb Tu, “Health Economics” Macmillan Education UK, 2013
2. James Henderson, “Health Economics and Policy”, International Thomson Publishing, New York.

3. Peter Zweifel & Friedrich Breyer, "Health Economics", Oxford University Press, Oxford.
4. Dr. D. Amutha, "A Text Book of Health Economics" Mangalam Publishers and Distributors, 2016
5. Paul J. Feldstein, "Healthcare Economics", Cengage Learning Publishing, California, USA, 2011
6. N.K Anand & Shikha Goel, "Health Economics", A.I.T.B.S Publishers India, New Delhi.
7. Sherman Folland, Allen C. Goodman and Miron Stano "Economics Of Health And Healthcare" 8<sup>th</sup> Edition, Routledge, New York, 2017
8. H.S.Rout & P.K. Panda, "Health economics in India", New Century Publications, New Delhi – 2007.
9. Dwivedi, D.N., "Microeconomic Theory", Vikas Publications, New Delhi.

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## 205. HOSPITAL FINANCIAL MANAGEMENT

**Objective:** The objective of this course is to expose the students to decision making in the areas of finance function. It will equip the student with concepts, techniques and tools for optimal management of financial resources of a health care organization.

### **Unit -I: Financial Management: An Introduction**

Concept of Business Finance - Role, Functions and Objectives of Financial Management in Hospitals and Healthcare Sector- Profit Maximization vs Wealth Maximization. Financial planning and Forecasting, Meaning, features, objectives and steps of financial planning – Strategic financial planning – financial forecasting – importance – methods and limitations. Time Value of Money - concept - rationale behind time value of money - compounding and discounting techniques

### **Unit- II: Capital Budgeting**

Capital Budgeting- Estimation of Projected Cash Flows - Investment Evaluation Techniques- Traditional/Non-Discounting Cash Flow (PBP, ARR) - Modern/Discounting Cash Flow (NPV, PI, IRR) - Quantification of Risk in Capital Budgeting - Capital Rationing.

### **Unit- III: Financing Decisions**

Sources of Finance for Hospitals - Concept of Capital Structure - Determinants of Capital Structure - Optimum Capital Structure - Capital Structure Theories. Cost of Capital and Leverages - Cost of Capital: Concept and Importance - Determinants of Cost of Capital - Classification and Computation of Cost of Capital - WACC, Meaning of Leverages - Types of Leverages.

### **Unit -IV: Dividend Decisions**

Dividends – Meaning and Definition - Forms of dividends - Factors Affecting Dividend Decisions - Relevance Theory (Walter's and Gordon's) and Irrelevance Theories of Dividend. Determinants and types of dividend policy – dividend policy in practice.

### **Unit -V: Working Capital Management**

Working Capital: Meaning - Components of Working Capital- Factors Affecting Working Capital - Operating Cycle - Determinants of Working Capital - Methods of Working Capital Forecasting and Sources of working capital. Management of Inventory - Inventory: Meaning and Definition - Factors Affecting Inventory Levels - Importance of Inventory Policies - Techniques of Inventory Management. Management of Accounts Receivables and Cash - Accounts Receivables – Meaning - Cost of Maintaining Receivables - Factors Affecting Receivables - Management of Accounts Receivables. Objectives of Cash Management - Techniques of Cash Management (Preparation of Cash Budgets)



## References:

- 1.Khan and Jain : Financial Management, Fourth Edition, Tata Mc Graw Hill, New Delhi, 2004.
- 2.Pandey I.M : Cases in Financial Management, Tata Mc Graw Hill, Second Edition, New Delhi, 2003.
- 3.William N. Zelman, Michael J. McCue, Alan R. Millikan, Alan R. Milikan : Financial Management of Health Care Organizations: An Introduction to Fundamental Tools, Concepts, and Applications, Blackwell Publishers; January 1998.
- 4.Bruce R. M.W. John : Fundamentals of Financial Management, Prentice Hall India, New Delhi, 1995.
- 5.James C. V. and M.W. John1 : Fundamentals of financial management, Prentice Hall India.
6. R.G Saxena : Principles of Auditing, Himalaya Publishing House, Bombay.
7. Sharma, Gupta Shashi K : Accounting for decision making - Kalyani Publishers
- 8.Reinhold Gruen & Anne Howarth : Financial Management in health services, Tata Mc Graw Hill Publishing Company Limited, New Delhi.
9. Kulkarni G.R, Satyashankar P, Libert Anil Gomes : Financial Management for Hospital Administration, Jaypee Brothers, Medical Publishers (P) Ltd.

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## 206. PATIENT CARE MANAGEMENT

### **Objective:**

To understand the processes and details related to effective patient Care and to further increase the satisfaction levels of patients.

### **Unit-I: Patient Centric Management**

Concept of patient care, Patient-centric management, Organization of hospital departments, Roles of departments & managers in enhancing care,

Patient Identification: Concept of Patient Identification - Significance of Patient Identification System - Patient Identification Parameters - Dimensions of Patient Identification - Patient Identification Errors - Drivers for Reducing Patient Identification Errors.

### **Unit-II: Patient Identification and Counseling**

Patient Behavior and Counseling: Patient Behavior: Concept – Types and Models - Psychographics in Patient Care & its Applications - Techniques for Change in Patient Behavior - Patient Counseling: Objectives, Types, Stages – Admission to Discharge - (Role of Patient Counselors in Hospitals).

### **Unit-III: Patient Classification Systems and the Role of Case Mix**

Need to Classify Patients, Types of Patient Classification Systems, ICD 9 & 10 (CM, PM), Case Mix Classification Systems, DRG, HBG, ARDRG, Case Mix Innovations and Patient Empowering Classification Systems.

Consent: Meaning, Types, Legality.

### **Unit-IV: Medical Ethics and Auditory Procedures**

Ethical principles, Credentialing and Privileging of Medical Professionals, Autopsy- Types, Legal Considerations, Tort Liability, Vicarious Liability, Medical Negligence – Meaning, Forms, Types, Use of Investigational Drugs, Introduction/need & Procedures for Medical Audit, Principles for Conducting a Medical Audit, Medical Audit Team, Audit administration & Regulating Committees.

### **Unit – V: Challenges in Patient Care Management**

PCM Challenges in Health Care Industry: Economic Challenges; IT Related Challenges; and Financial Challenges - Handling Billing Issues - Medico Legal Cases – Role of Feedback in PCM.

Latest Trends in PCM: Holistic Medicine: Concept, Principles, Components - Integrated Patient-Care Management Systems - Technology Acceleration and Digitalization.

### **References:**

- 1) Harris M G & Assoc. 2003. Managing Health Service: Concepts & Practices. MacLennan & Petty: Sydney
- 2) Kilpatrick A O & Johnson J A. 1999. Handbook of Health Administration & Policy. Marcel Dekkes Inc: New York

- 3) Kumar A. 2000. Encyclopedia of Hospital Administration & Development: Volume I. Anmol Publications Ltd: New Delhi.
- 4) Gupta S & Kant S. 1998. Hospital & Health Care Administration: Appraisal and Referral Treatise. Jaypee: New Delhi
- 5) Goal S L & Kumar R. 2004. Hospital Core Services: Hospital Administration of the 21<sup>st</sup> Century. Deep Publications Pvt. Ltd: New Delhi
- 6) Reddy N K S. 2000. Medical Jurisprudence & Toxicology. ALT Publications: Hyderabad
- 7) Rao M S. 1992. Health & Hospital Administration in India. Deep & Deep Publications: New Delhi
- 8) Patient Safety Pocket Guide . Joint Commission Resources
- 9) Must-have information for pharmacists about quality and patient safety - Joint Commission Resources
- 10) Getting the board on board: what your board needs to know about quality and patient safety

## **207. HEALTHCARE INFORMATION AND TECHNOLOGY SYSTEMS**

**Objective:** To help students understand the importance and application of Information Technology in Healthcare sector; study and understand the importance of data resources for organizations; explore the information needs of hospitals and understand the importance of computerization of medical data.

### **Unit – 1: Basics of Computers**

Concept of a Computer – Parts - Hardware Components - Storage Devices - Communication Devices – Networking: Importance; Types; Methods of Networking; Network Planning and Management - Software Components of a Computer: Application Software- Role of IT in Office Automation - Traditional vs. IT Office – Data Capture Methods - Integrated Office Automation - IT as a Tool of Competitive Advantage for Patient and Physician Engagement.

### **Unit – 2: Data and Information Security Standards**

Definition of Data - Data Management - Data Processing: Meaning and Importance; Requirements; Methods of Data Processing – Information: Definition; Characteristics; Uses; Sources of Health Care Information- : Data Base Management System – Relational Database Management System – Health Care Information Standards – Security in Hospital Information Systems: Security; Threats and Controls; Data Security; Computer Breach; Security Controls – HIPPA

### **Unit- 3: Health Care Information Systems**

Concept, Need, and Importance – Types of HCIS: MIS, HIS, Lab Information System, Radiology Information System- Administrative Information System- Reception / Front Office – Pharmacy Information System – Materials Management - Financial Accounting - HRM – Training and Development – House Keeping.

Clinical Information Systems – Appointments Scheduling – CPOE – Wards – OT – Clinical Laboratory – Blood Bank – Eye Bank – Nursing Information System

### **Unit – 4: System Development Life Cycle**

System Analysis, Design and Development: System Analysis - Object Oriented Analysis and Design – Logical System Design – Physical System Design - Tools and Techniques for System Design - Data Flow Diagrams - Data Dictionaries - System Flowcharts- System Implementation and Maintenance- Phases in Implementation – Implementation Tasks – Procedure Development – Testing – Documentation – System Evaluation – System Maintenance.

### **Unit – 5: Digital Health**

Traditional and Computerized Medical Records – Role of Medical Records in Health care Delivery- Implementing Wireless Computerized Patient Records– General Medical Records Standards and Policies – Legal aspects of Medical Records – Intellectual Property Rights- Electronic Medical Documentation and Smart Cards – Widely used latest Statistical and Evaluation Software- EHR- e health- Tele health- Health Monitoring Devices- Computer Assisted Coding System: Medical Transcription – Terminology of Coding – Classifications; Requirements for Classification – Coding and Description – Additional Requirements for Computer Assisted Coding System – ICD 10

## TOPICS FOR PRACTICALS

### MS Word and MS Excel:

(i) MS WORD: (a) Documents Formatting; (b) Mail Merge; (c) Designing of Templates; & (d) Macros Creating.

(ii) MS EXCEL: (a) Pivot Tables; (b) Data Analysis – Charts & Graphs; (c) Functions; & (d) V-Lookup & H-Lookup.

### MS Power Point and Browsing & Mailing

(i) MS POWERPOINT: (a) Designing of a Presentation; & (b) Customization of Presentation.

(ii) BROWSING & MAILING: (a) Using Various Research Tools; & (b) Mailing – CC, BCC, Creating Signatures, and Auto-reply.

### References:

1. Gordon B. Davis and M.H. Olson, Management Information Systems – Conceptual foundations, structure and development, McGraw Hill Publishing
2. Erid Muford, Effective Systems design and requirements analysis, McGraw Hill 1995.
3. Mahadeo Jaiswal & Monika Mital, Management Information System, Oxford University Press, 2005.
4. Rajesh Narang, Data Base Management System, Prentice – Hall India Private Limited, New Delhi.
5. Sadagopan. S, Management Information System, Prentice Hall India Private Limited, New Delhi.
6. Kenneth .C. Laudon & Jane P. Laudon, Management Information System Prentice - Hall India Private Limited, New Delhi.
7. Jerome Kanter, Managing with Information, Prentice Hall – India Private Limited, New Delhi.

## **208. PROJECT WORK (REPORT & VIVA)**

### **Objective:**

Since the entry qualification for this Masters Degree program is graduation in any discipline, exposure to and understanding of the internal working of a hospital / health care organization is essential for every student to appreciate and assimilate the learning in the Masters program. The subject is designed to facilitate this learning objective and is based on the principle of “learning by observation” and learning by doing will also help the student to learn the art of working in teams.

### **Pedagogy:**

The student has to select a project in any Hospital / Health Care related organization and work on it for 6 to 8 weeks and submit a report on that work and present his/her findings. While working on the project the student has to observe and understand the working of that organization and familiarize himself / herself with the functions of various departments of that organization.

### **Evaluation:**

Total marks of 100 will be distributed as:

- 50 for the content of the project work report.
- 50 for the Viva / Presentation on the project work.
- And accordingly grade will be awarded

## **301. STATUTORY AND REGULATORY COMPLIANCE**

### **Objective:**

To acquaint the students with various legal aspects concerning type and character of the health Care organizations and its duties towards patients and its employees and also familiarize the students in matters of liability of hospital towards medical negligence and medical malpractice in diagnosis, administration of drugs, surgery etc.

### **Unit – I: Introduction to Healthcare Laws and Regulations**

Professional Code of Conduct and Ethics - Hippocratic Oath - Declaration of Geneva - IMC Regulations 2002 - Geneva Convention – Torts - Law of Natural Justice. Legal Issues in Patient Care Management - Ethical and Legal Aspects of Doctor-Patient Relationship – Consent - Emergency Medicine -Medico Legal Case – LAMA - Absconding Patients - Dying Declaration and Doctor – Autopsy - Medical Termination of Pregnancy - Mental Health of Patients - Rights and Responsibilities of Patients. Medical Negligence - Duty of Care to the Patient - Breach of Duty - Types of Negligence - Forms of Negligence - Legal Liability of Hospital: Absolute Liability and Vicarious Liability - Remedies Available to Patients.

### **Unit – II: Acts Applicable to Hospitals**

Legal Requirements for Establishment of a Hospital - Building Bye Laws - Building Requirement for Radiation Safety - The Indian Electricity Rules - Regulation Governing Installation of Lifts & Escalators -Indian Boilers Act - Safety of Centralized Gas & Vacuum Supply Service – Petroleum Rules - Fire Safety Regulations- Registration of Hospitals/ Nursing Homes.

### **Unit – III: Laws Governing Management of Human Resources, Environment Protection**

ESIC Act - Maternity Benefit Act - Payment of Gratuity act - PF Act- Grievance Redressal System. Laws Governing Environmental Protection - The Environment Protection Act - Biomedical Waste (Management and Handling) Rules - Radiation Protection (Atomic Energy Rules) - Water (Prevention and Control of Pollution) Act - Provisions of Noise Pollution (Regulation and Control) Rules.

### **Unit - IV: Public Health Laws in Hospitals and Challenges in Health Care Laws**

Public Health Laws - Control of Epidemics - Notifiable Infectious Diseases - Prohibition of Smoking in Public Places Rules - The Registration of Births and Deaths Act - Prevention of Food Adulteration Act. Unethical/ Criminal Activities - Advertising - Rebates and Commissions - Unjustifiable Admissions/ Procedures - Issue of Fake Medical Certificate - Non-Reporting of MLC - Destruction/ Altering the Evidence - Sex Selection and Female Foeticide - Illegal Organ Trade - Disciplinary Action. Role of Government and its agencies in Public Healthcare Management

### **Unit – V: Emerging Issues**

Euthanasia - Assisted Reproduction – Surrogacy - Stem Cell Research - Genetic Research - Robotic Surgery – Telemedicine - Clinical Research

**References:**

1. S.K. Joshi – Law & the practice of medicine, Jaypee brother, medical publishers (p) Ltd.
2. Anoop Kaushal K – Medical Negligence & Legal remedies, Universal Law Publisher, New Delhi
3. R.K. Chaube – Consumer Protection and the medical profession, Jaybee publishers, New Delhi
4. Bismi Gopalkrishnan, Mercy Khaute & B.Sandeep Bhat – Reflections on Medical Law & Ethics in India
5. Y.V.Rao, Law relating to Medical Negligence, ASIA law house, Hyderabad.
6. R.K.Chaube, CPA & Medical profession (with legal remedies), Jaypee brothers medical publishers (P) LTD, New Delhi.

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## 302. SUPPLY CHAIN, LOGISTICS AND MATERIALS MANAGEMENT

### **Objective:**

To provide an understanding of Supply Chain, Logistics and Materials Requirements with reference to healthcare scenario.

### **Unit I: Basics of Supply Chain Management**

Operations management- definition, performance objectives and cost objectives-Supply Chain Management (SCM)- introduction, definition, evolution, concepts, -Internal components & External components of supply chain - Representation of health care supply chain with examples-Flows in a health care supply chain-Importance and functions of supply chain in health care organization-Types of Health care supply chain- internal supply chain, external supply chain, extended supply chain, closed loop supply chain, global & domestic supply chain - supply chain strategies in health care - Supply chain management decisions, Supply chain strategy- definition, importance, designing a strategy for a health care organization-Porter's generic strategies- supplier relationship strategies, supply chain framework strategies, logistics based strategies- Strategic fit and its process-Supply chain models-Supply chain managers

### **Unit II: Basics of Logistics Management**

Concepts of logistics and logistics management, objectives, types of logistics- internal, external, inbound, outbound, third party logistics and fourth party logistics-Outsourcing of logistics-Logistics costs-Components of logistics-Logistical competitive advantage-Benefits of logistics management in health care industry - components of logistics management - transportation management- definition, modes of transportation in health care, selection criteria and importance-Materials handling- definition, types, equipments used in materials handling, selection criteria and importance-Warehouse management- definition, importance and situations for warehousing - Role of information technology in supply chain management-Role of information technology in logistics management -Role of logistics in supply chain management, economy and health care organization.

### **Unit III: Materials Management in Health Care**

Evolution, definition, scope, importance, functions, -Materials management and hospital objectives-Materials management and hospital operations-Integrated concept of materials management-Materials manager decisions - materials planning and control - Materials planning- definition, importance, types, characteristics-Materials control- definition, importance nature and types-Relationship between materials planning and control in health care scenario-Process of materials planning and control - purchasing management - Definition, objectives, importance-Purchasing principles -Vendor evaluation- need, levels and factors of evaluation-Vendor rating -Vendor relationships- definition, types-Purchasing procedure in health care industry - Centralized purchasing & decentralized purchasing- definitions, advantages and disadvantages-Purchasing through negotiation- definition and concepts - Joint and shared purchasing-E-purchasing-Purchasing through letter of credit- definition, parties, types and process

#### **Unit IV: BASICS OF INVENTORY MANAGEMENT**

Definition, purpose, functions, objectives, hospital inventory expendables- types and criteria- Hospital inventory un-expendables- types and criteria-Inventory classification for suppliers- types and criteria-Inventory factors affecting the hospital-various inventory costs - inventory management techniques - Selective Inventory Techniques- concept and purpose – classification of techniques- purpose and procedure – benefits of techniques -MBASIC system for drugs – inclusion and exclusion criteria - Economic Order Quantity (EOQ)- definition, assumptions, graphical representation and derivation, reasons for EOQ modification - JIT and VMI - Lead time - definition, elements, classification and analysis in hospitals.

#### **Unit V: Stores Management**

Stores organization definition, objectives, classification and importance of stores-Hospital stores functions-Hospital stores manager- definition, qualification, duties and responsibilities - stores techniques - Stores accounting and records- various documents / forms-Stock verification importance and techniques-Stock valuation importance and methods -Codification, standardization and safety stock determination

#### **References:**

- 1 **K. Shridhara Bhat** Logistics & Supply Chain Management—Himalaya Publishing House
- 2 **Prof.D.K. Agarwal & MacMillan** Text book of Logistics & Supply Chain Management
- 3 **R. P. Mohanty and S. G. Deshmukh.** Supply Chain Management: Theory and Practices. Indian Text Edition.
- 4 **Datta** Materials Management— Prentice Hall Edition, second edition.
- 5 **K. Shridhara Bhat** Materials Management— Himalaya Publishing House
- 6 **Gopala Krishnan** Purchasing & Materials Management—Tata MacGrawHill edition
- 7 **Prof. L.C.Jhamb** Materials & Logistics Management—Everest Publishing House

### 303. TOTAL QUALITY MANAGEMENT

#### **Objective:**

To provide basic knowledge on the concepts of Quality Management on a journey towards safe and efficient patient Care.

#### **Unit I: Basics of Hospital Quality**

Introduction to Quality-Quality concepts-evolution & determinants of quality, types, costs& economics of quality-Importance of quality and role of quality in different aspects-Total Quality Management- meaning, definition, goals and essentials - Quality Gurus - Dr.W.Edwards Deming- Dr.Joseph Juran-Philip Crosby-Kaoru Ishikawa-A.V.Feigenbaum- Genichi Taguchi-Walter Shewhart - Quality Management in Hospitals - Patient need satisfaction concepts-Hospital quality system- quality planning, quality control, quality assurance, quality improvement-Quality function deployment-House of quality

#### **Unit II: Basic Quality Tools**

Processes in Service organization and their control-Check sheet-Histogram-Scatter diagrams-Process mapping-Cause and effect diagram-Pareto analysis-Run chart-Control charts - Advanced quality tools - WHY tool-Affinity diagram-Relations diagram-Tree diagram-Matrix diagram-Arrow diagram-Matrix data analysis chart-Process decision program chart

#### **Unit III: Systems Approach to Quality**

Benchmarking- definition, reasons, areas of benchmarking, types, process, advantages & disadvantages-Business Process Reengineering – definition, components,, reasons, methodology, benefits & limitations, analysis-FMEA - six sigma and lean management - Six Sigma in Health Care: Basics of Six Sigma, Vision, Six Sigma in Hospitals-evolution, methodologies, benefits – Best practice case illustrations – Lean Management Techniques to boost Health care productivity - benefits.

#### **Unit IV: Quality in Patient Care**

Contemporary Quality Improvement & Patient Safety Initiatives-Use of root cause analysis in evaluating the challenges posed by clinical vs. operational patient flow-Streamlining patient flow: shortening waiting, cycle time and turnaround time - Basics of QCI, NABH, NABL, JCI

#### **Unit V: Quality and Hospital Performance**

Allocating resources effectively to handle bottlenecks in capacity-Improving the efficiency of patient Care administration and coordination-Determining key objectives in overall performance measurement of a hospital's Operations-Developing appropriate KPIs - quality and score cards Identifying drivers and Strategic outcomes in an ambulatory Care clinical setting-Assessing result to evaluate the strengths and Weaknesses of hospital operations-Utilizing results to improve patient satisfaction and quality management

**References:**

1. Bester field H.Dale : Total Quality Management, Pearson New Delhi.
2. Sridhr Bhat : Total Quality Management, Himalaya Publications, Mumbai.
3. Sundara Raju, S.M., : Total Quality Management: A primer, Tata McGraw Hill.
4. Srinivasan, N.S. and V. Narayana : Managing quality – Concepts and Tasks, New Age International.
5. Kume.H : Management of Quality, Productivity Press.
6. Dennis, Lock., : Handbook of Quality Management.
7. Hammer. M., and Spect : Business Process Reengineering, 1995, ISQUA Journal.
8. Karen Parsley & Philomena Corriagn : Quality Improvement in Nursing and Health Care: A Practical Approach, Chapman & Hall, London.

## 304. OPERATIONS RESEARCH FOR DECISION MAKING

### **Objective:**

To provide exposure to the Major Tools and Techniques of operations research and create awareness of their application in health care environment.

### **Unit I: Introduction to Operations Research**

Introduction to Operations Research – History, Approach, Techniques and Tools – Relationship between OR Specialist and Manager – Typical Applications of OR – Phases and Processes of OR Study – Limitations of Operations Research

### **Unit II: Programming Techniques**

Linear Programming: Introduction – Formulation of a Linear Programming Problem – Formulation with Different Types of Constraints – Graphical Analysis – Graphical Solution only – Application of Linear Programming in Hospitals and Health care Industry.

### **Unit–III Transportation and Assignment problems**

Transportation Problem: Introduction – Basic Feasible Solution of a Transportation Problem – Stepping Stone Method – Unbalanced Transportation Problem – Degenerate Transportation Problem – Maximization in a Transportation Problem.

Assignment Problem: Introduction – Solution of the Assignment Problem – Unbalanced Assignment Problem – Problem with some Infeasible Assignments – Maximization in an Assignment Problem. Travelling Salesman Problems

### **Unit IV: Queuing and Simulation**

**Queuing Models:** Introduction – Characteristics of a Queuing Model – Notations and symbols – Statistical Methods of Queuing –Single line queuing models– Decision Problems in Queuing – Applications in hospitals

**Simulation:** Introduction – Reasons for using Simulation – Steps in the Simulation Process – Some Practical Applications of Simulation in hospitals.

### **Unit V: Network Analysis and Game theory**

Network: Meaning & Concepts of Network – Three time estimates – Serial & parallel paths – Crashing – Time-Cost trade off – Total duration – Cost analysis – PERT & CPM – Applications of network analysis in hospital management. *Game Theory:* Introduction, Competitive Situations, Characteristics of Competitive Games, Maximin – Minimax Principle, Dominance

**References:**

1. Kanti Swarup : Operations Research, 12<sup>th</sup> edition, Sultan Chand, New Delhi.
2. Sharma J.K : Operations Research, 2<sup>nd</sup> edition, Mc Millan publishers, Delhi.
3. Srinivasan A.V., : Modern Management, ch.12, response books, New Delhi.
4. Vora, N.D : Quantitative Techniques to Management, Tata McGraw-Hill, New Delhi.
5. Levin R.S : Quantitative Approaches to Management, Mc Graw Hill, Singapore.
6. V.K. Kapoor : Operations Research Techniques for Management Sultan Chand & Sons, New Delhi.
7. Anand Sharma : Operations Research, Himalaya Publishing House, Mumbai.
8. Hamady A.Taha : Operations Research, Pearson Education Inc. New Delhi.

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## **305 HEALTH INNOVATIONS, TECHNOLOGY AND ARTIFICIAL INTELLIGENCE**

### **Objectives:**

To familiarize the students in drug management in hospitals and also with the management of equipment in hospitals and the application of technology in health care

### **Unit I: Healthcare innovation in life sciences**

Health care technology from a business perspective – micro and macro-economy views overview of main advances in technology in the last century and their impact on social welfare the pharmaceutical sector - the biotechnology sector – the medical device sector, the dynamic of technological evolution and capital market ingenuity - mergers, acquisitions, and the advantages of scale in the pharmaceutical sector

### **Unit II: Business Innovation and Technology**

Creativity vs. innovation, product development and commercialisation, types of innovation - disruptive, frugal and reverse, innovation vs. Invention

### **Unit III: Concepts and Issues related to Healthcare Technology**

Introduction – problems and constraints associated with health care technology – present trends in health care technology – hospitals and technology – dealing with technological problems. Planning and adopting appropriate technology in health care – mechanism to ensure appropriate use of health care technologies – developing sources of information on hospital technology – medical communications to doctors – evaluation methods of health technology.

### **Unit IV: Application of Technology in Different Healthcare Units**

Application in diagnostic service areas (radiology, lab services etc) – clinical services areas (nephrology, urology, cardiology etc) – therapeutic services – patient support areas – telemedicine – PACS – RFID – paperless hospitals – biomedical informatics – artificial intelligence and robotics in health care – factors affecting the growth of new medical technology.

### **Unit V: Modern Healthcare Innovations**

Innovation - process and product performance, engineering entrepreneurship, smart hospitals, tele health innovations, consumer health informatics, mobile health apps, value in health management focus on long-term care industry

### **References;**

1. The business of healthcare innovations –Lawton Robert Burns
2. Anthony y. K. Chan : Medical Technology Management Practice, Charles C Thomas publisher
3. Ann Fullick : Medical Technology, Heinemann Raintree publishers

4. U. Ravi Kiran: A textbook of Technology Management Artificial Intelligence – a Modern Approach (3<sup>rd</sup> edition) , *Stuart Russell & Peter Norvig*
5. Machine learning for dummies, *John Paul Mueller and Luca massaron*
6. Make your own neural network, *Tariq Rashid*
7. Machine learning: the new AI, *Ethem Alpaydin*
8. Fundamentals of machine learning for predictive data analytics: algorithms, worked examples, and case studies, *John d. Kelleher, Brian mac namee, Aoife D'Arcy*
9. The hundred-page machine learning book, *Andriy Burkov*
10. Artificial intelligence for humans, *Jeff Heaton*
11. Machine learning for beginners, *Chris Sebastian*
12. Artificial intelligence: the Basics, *Kevin Warwick*



## **306. ENTREPRENEURSHIP AND CONSULTANCY MANAGEMENT**

### **Objective:**

To create interest in students to start a venture, learn the intricacies of starting an enterprise, identifying opportunities, Inculcating enterprising values with orientation towards setting up own enterprises, and equip the student to take up consultancy work in various facets of hospital management.

### **Unit I: Overview of Entrepreneurship**

Overview: Definition and Meaning of entrepreneurship, Characteristics and Functions of Entrepreneur, Importance and Limitations of Entrepreneurship, Types of Entrepreneurs, Innovation and Entrepreneurship. Idea generation: Brain storming in terms of project ideas, Nominal Group Technique; Creativity. Lateral Thinking; Research & Development, IPR, Patenting; Opportunities in health Care; NGO collaboration, Women entrepreneurship.

### **Unit II: Feasibility Study**

Operational feasibility, Technical feasibility, Market feasibility, Financial feasibility, Economic Forecasting, Project Report writing.

Support systems for new Enterprise Creation, new enterprise Identification and Selection, Enterprise Establishment and Management.

### **Unit III: Sources of Finance**

Short – Term Sources – Instruments – Long Term Sources – Instruments – Sources – Commercial Banks, Development agencies. Indian and International funding organizations, Capital market. Venture and Start-up capital.

### **Unit IV: Overview of Health Care Consultancy**

Consulting Industry with specific reference to Hospital and Health Care consulting perspective. Professionalism & Ethics in consulting, Consultant – Client Relationship, Behavioral roles of consultants.

### **Unit V: Consulting Process in Health Care**

Entry: initial contracts – preliminary problem diagnosis – terms and references – assignment strategy and plan – proposal to the client – consulting contract.

Diagnosis: Conceptual frame work of diagnosis – diagnosing purpose and problem – defining necessary facts – sources and ways of obtaining facts – data analysis – feed back.

Action Planning: Possible Solutions – evaluating alternatives – presentation of action.

Implementation & Termination: Consulting in various areas of Health Care Management.

## References:

1. J.B.Patel and S.S. Modi : Manual on Business Opportunity Identification & Selection, Entrepreneurship Development Institute, Ahmadabad.
1. Edward Bono : Lateral thinking, Penguin Books, London.
3. S.S. Khanka : Entrepreneurial Development, S. Chand & Co, New Delhi.
4. Vasanth desai : Dynamics of Entrepreneurial Development and Management, Himalaya Publishing House, Mumbai.
5. David H. Hott : Entrepreneurship – new venture creation, Printice Hall India, New Delhi, 2004.
6. Milan Kubr : Management Consulting (A guide to the Profession) 3<sup>rd</sup> revised edition. Published by International Labour Organization (ILO)
7. Susan Nash : Starting & Running a Successful Consultancy: How to Build and Market Yours Own Consultancy business.  
Publisher: How to Books Ltd., Spring Hill House, Oxford, U.K.
8. Philip Sadler : Management Consultancy, Kogan Page Ltd., London.
9. J.B.Patel and D.G. Allampally : Manual on How To Prepare A Project Report, Entrepreneurship Development Institute, Ahmadabad
10. Holt H.G. David : Entrepreneurship, Prentice Hall India Publishers, New Delhi
11. Anil Kumar S : Entrepreneurial Development, New age Publications, New Delhi
12. Mick Cope : The Seven Cs of consulting: Yours Complete blue Print for any Consultancy Assignment, Prentice Hall India
13. Alan Weiss : Getting Started in consulting, John Wiley & Sons, New Delhi

## 307. HEALTH INSURANCE AND MEDICAL TOURISM

### Objective:

The objective of this course is to familiarize the students in the areas of health insurance and to provide a managerial frame work with the concepts of medical tourism.

### Unit – I: Introduction to Risk and Insurance

Concept of risk- Risk Identification and Evaluation- Risk Management Techniques- Concept of Insurance - Concept of health insurance - Principles of insurance- Demand and Supply of Health Insurance – Health Insurance Products in India- Designing and Pricing of Health Insurance Product- Managed Care- Current trends in Health Insurance- International and Indian Scenario

### Unit – II: Operations in Health Insurance

Health Insurance Underwriting – Need - Factors impacting Morbidity- Documents used for Underwriting - Underwriting process - Claim Management Process- Role & Responsibilities of TPA s –Insurance Regulatory Development Authority (IRDA) regulations for TPAs

### Unit – III: Marketing and Distribution of Health Insurance Products

Different elements of insurance marketing - Uniqueness of insurance markets- Distribution channels for selling health insurance- Legal Framework and Documentation- Role of IT in Insurance- Tax Planning- Ethical Issues

### Unit - IV: Medical Tourism - An Introduction

Tourism- Meaning, Motives, Classification and Components of Tourism- Medical Tourism- Nature and Scope- Growth of Medical Tourism Industry- SWOT Analysis- Medical Tourism Products- Factors and steps for designing product or tour package - Approvals and formalities - Pre-tour arrangements -Tour operators - Post tour management - Claiming health insurance in medical tourism- Medical tourism facilitators

### Unit-V: Medical Tourism- Legal Aspects and Promotional Strategies

Certification and accreditation in medical tourism - Ethical, Legal, Economic and environmental issues in medical tourism - Medical malpractice- Branding - Digital marketing - Public relations - Word of mouth communication - Promotion strategies adopted by various hospitals

### References:

- 1) Kenneth Black, Jr. Harold D.Skipper, Jr—Risk and Health Insurance, thirteenth edition, Pearson Education Pvt. Ltd., Delhi, 2003.
- 2) P.K.Gupta—Insurance & Risk Management, Himalaya Publishing House, 2<sup>nd</sup> edition.
- 3) S.C.Sahoo & S.C.Das—Insurance Management-text & cases, Himalaya Publishing House, 1<sup>st</sup> Edition.
- 4) Neelam C.Gulati—Principles of Insurance Management, Excel Books
- 5) Sonal Kulakarni—Medical Tourism in India
- 6) <http://www.medicaltourisminindia.net/index.html>

## 401. STRATEGIC MANAGEMENT

### **Objective:**

To familiarize the students with various concepts of strategic management in healthcare

### **Unit - I: Basics of Strategic Management**

Business policy-Strategy- evolution, nature, definition, dimensions and need of strategy- Strategic management- evolution from business policy, definition, need, importance, model. -Current healthcare scenario- Strategic Business Units in healthcare - strategic intent - Hierarchy of strategic intent-Vision, envisioning process-Mission-Vision Vs Mission in healthcare-Business definition-Business model-Goals-Objectives-Philosophy and values of a health care organization. Balance Score Card-Definition, working of balance score card in hospitals-Critical Success Factors (CSFs- Key Performance Indicators (KPIs) - definition, examples in healthcare industry.

### **Unit - II: Environmental Appraisal**

Environment Characteristics-general environment & relevant environment for a health care organization-Environmental scanning-definition, various concepts, benefits & pitfalls-Environmental Sectors-factors affecting selection of environmental sectors-Environmental Threat & Opportunity Profile. Organizational appraisal – definition - Organization dynamics and its elements -Organizational capability factors- various concepts -Strategic Advantage profile-SWOT analysis-introduction, definition, benefits & pitfalls-SWOT matrix for a healthcare organization, examples

### **Unit- III: Strategy Formulation**

Market share-introduction, definition, types and significance-Different firms and strategies based on market share in health care industry-Dominant firms- definition and strategies- Low market share firms- definition and strategies-Stagnant firms- definition and strategies - strategy analysis & choice - definition, process and stages-tools & techniques- SWOT analysis, Porter's 5 force analysis, Experience curve analysis, Life cycle analysis, Strategic group analysis, Competitor analysis. Corporate portfolio analysis- BCG matrix and GE matrix-Contingency planning-Strategic plan of a health care organization

### **Unit - IV: Strategy Implementation**

Definition, characteristics-Strategy formulation Vs Strategy implementation - strategy implementation model & its themes applied to health care industry-Activating strategies-project management & strategy implementation, procedural implementation & strategy implementation, resource allocation & strategy implementation - areas of implementation - Structural implementation- definition of organization structure, types and structures for strategies-Behavioural implementation- strategic leadership types & styles and their development, corporate power & politics and their types, corporate culture & its composition, personal values & ethics, social responsibility. Achieving implementation - Models of implementation. Functional implementation in health care- vertical fit & horizontal fit-various functional plans & policies-Integration of the plans & policies at functional level-Operational implementation in health care- areas of operational implementation

## Unit - V: Strategy Evaluation and Control

Strategy evaluation- definition, importance, participant and barriers and requirements in health care organization-Strategy control- definition and types-Operational control- definition & process-Evaluation techniques for strategic control-Evaluation techniques for operational control - case studies: introduction, methodology and analysis

### References:

- 1) Azhar Kazmi, Strategic Management and Business Policy, Tata Mc Graw Hill, third edition.
- 2) B.Hiriyappa, Strategic Management, New Age International Publishers.
- 3) P.Subba Rao, Business Policy & Strategic Management, Himalaya Publishing House.
- 4) Srivastava, Management Policy and Strategic Management; Himalaya Publications.
- 5) Alan M.Zuckerman, Healthcare Strategic Planning, Prentice Hall of India, 2<sup>nd</sup> edition.
- 6) R.Srinivasan, Strategic Management-The Indian context, Prentice Hall of India, 2<sup>nd</sup> edition.
- 7) Mc Carthy, Minichiello, Curran, Business Policy & Strategy-concepts & readings, Richard D.Irwin, 4<sup>th</sup> edition.

## 402: MANAGEMENT ACCOUNTING AND CONTROL

### Objective:

To provide an understanding of the cost concepts and methods of costing and enable the decision making process by using management accounting tools

### Unit I: Introduction to Management Accounting:

Management Accounting, Definitions, Relationship with Financial Accounting and Cost Accounting, Need and Importance of Management of Accounting, Role of Management Accountant in a Hospital

Financial Statement Analysis – Ratio Analysis – Introduction – Importance – Limitations – Types of Ratios – Common Size, Comparative and Trend Analysis – Cash flow analysis

### Unit II: Introduction to Cost Accounting:

Concept of Cost, Costing – Analysis And Classification of Costs – Elements of Cost – Costing Methods – Unit/Output Costing – Job and Batch Costing – Service or operating costing – meaning – nature – classification of cost – hospital costing

### Unit III: Marginal Costing and Break – Even Analysis:

Definition of Marginal Cost and Marginal Costing – Assumptions – PV Ratio – CVP Analysis – Break–Even Analysis – Managerial Applications of Marginal Costing.

### Unit IV: Contemporary concepts

Activity Based Costing - Need for emergence of ABC – concept – characteristics – steps to develop an ABC system. Life cycle costing – nature and definition – categories of life cycle project costs – target costing – Kaizen costing – Balance score card (including problems)

### Unit V: Budgetary Control:

Meaning – Importance – Types of Budgets – Concept of Budgetary Control, Preparation of various functional budgets– Performance Budgeting – Zero Base Budgeting

### References:

- 1) Anthony A. Atkinson, Robert S. Kaplan, S.Mark Young, Management Accounting, Fourth edition, Pearson Education Pvt. Ltd., Singapore.
- 2) Ravi Kishore M, Cost and Management Accounting, Second edition, Taxmann Publishers, New Delhi.
- 3) Steven A. Finkler. David'.M. Ward. Accounting for Health Care Organizations, 2nd edition, Aspen Publishers.
- 4) Jain and Narang KL “Advanced Cost and Management Accounting” Kalyani Publishers
- 5) Charles T Horngren, George Foster, Srikant M. Datar – Cost Accounting – A Managerial emphasis, Prentice Hall, India
- 6) Sharma and Gupta, Management Accounting, Kalyani Publishers
- 7) Shukla M.B – Cost and Management Accounting – Himalaya Publishing House
- 8) Williamson Duncan – Cost and Management Accounting – Prentice – Hall India

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## **403. HEALTHCARE ANALYTICS**

**Objective:** To provide a broad overview of data analytics and to gain insight for making informed healthcare decisions.

### **Unit I: Introduction to Data Analytics**

Introduction, Background - Data Structure - Electronic Health Record (Structured EHR, Unstructured EHR and Medical Images), Genomic Data (DNA Sequences) Behaviour data (Social Network, Mobility sensor data). EMR module – introduction – Components – Benefits

### **Unit II: Mining of Sensor data in Healthcare**

Minor sensor data in Medical Informatics – Challenges in Healthcare data Analytics – Non clinical healthcare applications.

### **Unit – III: Data sources and interpretations in Hospitals**

Out-Patient (OP) Data Indicators - Geographic and Demographic analysis of Patients, Appointment Turn Around Times, Understanding New/ Follow-up visits and its interpretations, Lead generations Vs conversions on Diagnostics & Pharmacy prescriptions, Planned admissions and conversions, Average Prescription value on Diagnostics & Pharmacy sales, Opportunity sales Loss on potential conversions. Understanding Bounce and stock outs at Pharmacy. Feedback and Net Promoter Score (NPS) analysis.

In-Patient (IP) Data source and Utilisation - No of Beds, No of Admissions, No. of Discharges, Average Daily Census, ALOS, Total stay Days, Average Bed Occupancy Rate, Bed Turnover Rate, No. of ICU Beds, Average ICU Bed Occupancy Rate, Average ICU length of stay, No. of Transfers, No. of Deaths & Mortality Rates. Average Revenue Per Operational Bed (ARPOB) - Average Revenue per Patient (ARPP) – Payor wise Average revenue per patient – Department wise and Doctor wise Revenue (ARPOB/ARPP) – TTM, YTM, MTD - Estimates Vs Billing and Discrepancies - Discount and Impact Analysis

Emergency Room (ER) Indicators and interpretations - ER workflow and services - Data collection and Time-Motion studies - ER Responsive time-motion assessment; Nurse, Physician and Specialist

- ER to admission ratios - ER Discharges/LAMA percentages - Re-Visit rate within 48 hours with RCA

Operation Theatre (OT) Data Indicators and interpretations - No. of surgeries planned Vs performed Vs cancelled - Interpretation of surgeries as per - Department wise, Doctor wise, Anaesthesia wise, Duration wise - No. of re- explorations - Turn Around Times (TAT) in OT

#### **Unit -IV Modern Applications of Insurance Claims Data in Healthcare Research**

Introduction - Modern Applications of Insurance Claims Data in Healthcare Research  
Advantages and limitations of claims Data Application – Areas - Statistical Methodologies used in Claims Based studies. Healthcare cost Predictions - Modeling of Healthcare costs - Modeling of Disease burden and Interactions - Prediction algorithms - Applying regression methods to cost predictions.

Modeling and Simulation of Measurement - Uncertainty in clinical Laboratories – Background – Measurement of uncertainty - Pre Analytical, Analytical and Post Analytical estimation

#### **Unit – V Discrete-Event Simulation for Primary Care Redesign**

Literature on Discrete-Event Simulation in Healthcare - **Simulation case study on:**  
Patient flow Model Development - Model Validation

**What IF Analysis** - Staffing analysis - Doctor Analysis - Schedule Change - Volume Change - Room/Ward Assignment - Early/late start

#### **References:**

1. Trevor L. Strome (2013). Healthcare Analytics for Quality and Performance Improvement. John Wiley & Sons, Inc.
2. Excel for Dummies; Greg Harvey; Wiley
3. Statistical Analysis with Excel For Dummies, 4th Edition; Joseph Schmuller; Wiley
4. Business Analytics: The Science of Data-Driven Decision Making; U Dinesh Kumar; Wiley
5. Excel Statistics: A Quick Guide; Neil J. Salkind; Sage Publications
6. Applied Business Statistics, 7th Edition; Ken Black; Wiley
7. Data Analysis Using SQL and Excel, 2nd Edition; Gordon S. Linoff; Wiley



## **404. INTERNSHIP (4 MONTHS)**

### **Objective:**

To provide on the job experience, as an understudy in a Hospital/ Health Care Organization, to help the student understand systems and procedures and learn to make decisions considering the organization as an integral unit.

### **Pedagogy:**

Internship is of **four (4)** months duration and the students are to be compulsorily placed in some select Hospital/ Health Care Organization anywhere in the country / abroad.

### **Evaluation**

Evaluation will be done at the end of four months by the host administrators. The performance of the student during internship will be evaluated by a host administrator under various parameters in a standard format.

In addition, the candidate has to submit a certificate issued by the host administrator that he/ she has completed the internship.

Format for evaluation will be provided to the host administrator. He will be requested to send the performance evaluation scores of the intern, confidentially, to the institute which will be in turn sent to the University along with the internship completion certificate.

During this period the student is expected to work under the guidance of the administrator. The student is expected to work in all major departments of the Hospital / Health Care Organization to gain insiders view about the entire organization.

### **Internship Guidelines**

The Internship is for 4 months duration. The students have the opportunity to work in all kinds of hospitals which include public, charitable, trust, mission, and corporate hospitals. In the given scenario hospital management students are very much required in all kinds of hospitals.

The objective of the internship is to provide complete orientation of the hospital, undertake department study and acquire the skills to manage the department independently.

The students are required to choose 4 clinical and 4 supportive departments. They should adopt case study approach to study the departments comprehensively. The department work should be done for 4 weeks. The complete internship work should be properly documented. The students are required to maintain an internship diary.

**Osmania University, Hyderabad**  
**MDHM Internship Evaluation Form**

(To be filled by the Host Administrator or person in charge for supervising the intern(s))

Name of the Student : \_\_\_\_\_ HT NO: \_\_\_\_\_

Name of the Hospital / Organization : \_\_\_\_\_

PARAMETERS OF EVALUATION		Please circle the relevant mark.					
<b>I. Understanding the Organization (25 Marks)</b>							
a.	Vision/ Mission / Objective	0	1	2	3	4	5
b.	Organizational structure	0	1	2	3	4	5
c.	General functions in the Organization	0	1	2	3	4	5
d.	Policies, Procedures of the Organization	0	1	2	3	4	5
e.	Collateral functions of the Organization	0	1	2	3	4	5
<b>2. Problem Identification (25 Marks)</b>							
a.	Ability to identify problems	0	1	2	3	4	5
b.	Ability to study and collect relevant information	0	1	2	3	4	5
c.	Ability to use statistical tools	0	1	2	3	4	5
d.	Ability to analyze information	0	1	2	3	4	5
e.	Ability to offer feasible solutions	0	1	2	3	4	5
<b>3 Record Writing / Submission (20 Marks)</b>							
a.	Content of the records - facts, figures etc.	0	1	2	3	4	5
b.	Analytical description of the work/activities done	0	1	2	3	4	5
c.	Regularity in submission of records	0	1	2	3	4	5
d.	Use of professional knowledge in records	0	1	2	3	4	5
<b>4. Interpersonal relationship / Team Work (15 Marks)</b>							
a.	Ability to adjust with and work harmoniously in teams	0	1	2	3	4	5
b.	Sharing of information with executives/ employees	0	1	2	3	4	5
c.	Ability to participate in meetings meaningfully	0	1	2	3	4	5
<b>5. Observance of Organizations decorum and discipline (15 Marks)</b>							
a.	Regularity and Punctuality	0	1	2	3	4	5
b.	Observance of rules and regulations	0	1	2	3	4	5
c.	Discipline	0	1	2	3	4	5

TOTAL MARKS 100

Marks Secured: \_\_\_\_\_

The candidate has joined on \_\_\_\_\_ for internship and relived on \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name of the Administrator: \_\_\_\_\_

Place : \_\_\_\_\_

Stamp

Please return this to the Principal \_\_\_\_\_

## **405. DISSERTATION**

The student should identify a topic for Dissertation and conduct the study for a period of 12 weeks. The topic selected for Dissertation should be of interest to the host hospital as well as workable for the student. The topic may pertain to any of the functional areas of hospital management such as Patient care management, materials management, operations management, financial management, Total Quality Management and accreditation and so on. The main objective of the students should be to get problem solving skills and connect with a variety of environment and exhibit and develop Leadership skills.

## **406. VIVA VOCE**

Dissertation Viva-Voce:

These are evaluated on a grading system of A, B, C, D and E as per university norms by a committee. The committee will consist of:

- d) Chairman, BOS in Business Management or his/her nominee as the Chairman.
- e) One Professional Hospital Administrator / Health Care Consultant / Health Care Academician as member
- f) Principal or his/her nominee of the concerned college as Convener.