

GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT

COURSE CURRICULUM

**COURSE TITLE: HOSPITAL MANAGEMENT & INFORMATION SYSTEM
(Code: 3340303)**

Diploma Programme in which this course is offered	Semester in which offered
Bio-Medical Engineering	4 th Semester

1. RATIONALE

Bio-medical engineer is a vital part of hospital management. Hence for Bio-medical engineering personnel, it is essential to have a knowhow of Hospital Management & Information System. This course is intended to equip the student with the knowledge of basics of hospital planning and design, patient and nursing services, critical care services and administration of hospitals.

2. COMPETENCY

The course content should be taught and curriculum should be implemented with the aim to develop required skills so that students are able to acquire following competency:

- **Describe planning, administrative services, layouts and working of the hospitals.**

3. COURSE OUTCOMES (COs)

The theory should be taught and practical should be carried out in such a manner that students are able to acquire different learning out comes in cognitive, psychomotor and affective domain to demonstrate following course outcomes.

- Identify various areas of hospitals.
- Identify various activities of departments like out/in patient and nursing.
- Discuss about critical care departments of hospital like ICCU, ICU and activities of Central Sterile Supply Department.
- Discuss about effective hospital management.
- Maintain various medical records and waste management.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				Total Marks
L	T	P		Theory Marks		Practical Marks		
			C	ESE	PA	ESE	PA	
3	0	0	3	70	30	00	00	100

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit; ESE - End Semester Examination; PA - Progressive Assessment

5. DETAILED COURSE CONTENT

Unit	Major Learning Outcomes (in cognitive domain)	Topics and Sub-topics
Unit – 1 The Hospital	1a. Define medical care and a hospital. 1b. Explain environmental health services. 1c. Explain the changing role of hospitals. 1d. Enlist different guiding principles in hospital planning and explain in brief. 1e. Give classification of hospitals and explain in brief. 1f. Explain various factors influencing hospital utilization.	1.1 Role of hospital in health care 1.1.1 Medical care 1.1.2 A hospital 1.1.3 Health & medical care 1.1.4 Environmental health services 1.1.5 The changing role of hospitals 1.2 Hospital planning & design 1.2.1 Guiding principles in planning 1.2.2 Classification of hospitals 1.2.3 Factors influencing hospital utilisation
Unit – 2 Out/In patient & Nursing Services	2a. Define following terms: Outpatient, Emergency outpatient, referred outpatient, general outpatient, outpatient visit, unit of service & service time. 2b. Draw and explain flowchart of an outpatient department 2c. Enlist common problems in outpatient services and explain in brief. 2d. Describe various functions of nursing services. 2e. Elucidate various factors influence the number of nurses.	2.1 Outpatient services 2.1.1 Terms: Outpatient, emergency outpatient, referred outpatient, general outpatient, outpatient visit, unit of service & service time 2.1.2 Flow pattern of outpatient department 2.1.3 Common problems in a. outpatient services 2.2 Nursing services 2.2.1 Functions and role of nursing services 2.2.2 Factors influencing the number of nurses
Unit – 3 Intensive Care Unit and Central Sterile Supply Department	3a. Explain role and functions of an ICU. 3b. Enlist different types of ICU & explain it. 3c. Draw and explain layout of an ICU. 3d. Explain functions of CSSD. 3e. Draw and explain flowchart of CSSD.	3.1. Introduction, Role & functions of ICU 3.1.1 Types of ICU 3.1.2 Layout of ICU 3.2. Introduction of CSSD 3.2.1 Functions of CSSD 3.2.2 Flow chart of CSSD

Unit– 4 Effective hospital management	4a. Describe various principles of hospital management. 4b. Explain various managerial activities of a hospital. 4c. Describe role and functions of hospital administration.	4.1. Introduction 4.2. Principles of management 4.3. Managerial activities of a hospital 4.4. Roles & functions of hospital administration
Unit – 5 Administrative services	5a. Explain various functions of medical records. 5b. Draw and explain flowchart of inpatient record. 5c. Explain operative goals of materials management. 5d. Explain the material management process in detail. 5e. Define waste and give classification of waste. 5f. Explain characteristics of a good waste disposal system. 5g. Draw and explain flow process of hospital waste.	5.1 Medical Records 5.1.1 Introduction 5.1.2 Functions 5.1.3 Flowchart of inpatient record 5.2 Materials management 5.2.1 Operative goals of materials management 5.2.2 Materials management process 5.2.3 Disposal of hospital waste 5.3.1 Types and general classification of waste 5.3.2 Characteristics of a good waste disposal system and flow process of hospital waste

6. SUGGESTED SPECIFICATION TABLE WITH HOURS & MARKS (THEORY)

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			Total Marks
			R Level	U Level	A Level	
I	The Hospital	10	12	-	-	12
II	Out/In patient & Nursing Services	10	10	4	-	14
III	Intensive Care Unit and Central Sterile Supply Department	6	8	6	-	14
IV	Effective hospital management	6	14	-	-	14
V	Administrative services	10	8	8	-	16
	Total	42	52	18	-	70

Legends: R = Remember; U = Understand; A = Apply and above levels (Bloom's revised taxonomy)

Note: This specification table shall be treated as only general guideline for students and teachers. The actual distribution of marks in the question paper may vary from above table.

7. SUGGESTED LIST OF EXERCISES/PRACTICAL/EXPERIMENTS

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8. SUGGESTED LIST OF STUDENT ACTIVITIES

- i. Student should visit atleast one hospital to understand the working environment of the hospital.
- ii. Prepare charts of a hospital layout.

9. SPECIAL INSTRUCTIONAL STRATEGIES (if any)

- i. Arrange visit to a nearby medium or big size hospital
- ii. Ask students to work as assistant in front office/reception/enquiry of a hospital during their vacation period.

10. SUGGESTED LEARNING RESOURCES**A. List of Books**

S.No.	Title of Book	Author	Publication
1.	Hospital Planning and Administration	Ckewelyn Davis	J.P. Brothers
2.	Principles of Hospital Administration and planning	Dr. B.M. Sakharkar	J.P. Brothers
3.	Managing a Modern Hospital	A.B. Srinivasan	Response Book
4.	Hospital and Health Care Administration	Shakti Gupta	J.P.Brothers

B. List of Major Equipment/ Instrument

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C. List of Software/Learning Websites

- i. <http://www.medindia.net/>
- ii. <http://ocw.mit.edu/>

10. COURSE CURRICULUM DEVELOPMENT COMMITTEE**Faculty Members from Polytechnics**

- **Prof. A.K.Bula**, Lecturer, Dept. of Instrumentation Engineering, G.P.Gandhinagar
- **Prof. N.D.Makwana**, Lecturer, Dept. of Biomedical Engineering, G.P.Gandhinagar
- **Prof. M.H.Dave**, Lecturer ,Dept. of Biomedical Engineering, G.P.Gandhinagar
- **Prof. S.S.Malkan**, Lecturer, Dept. of Biomedical Engineering, G.G.P.Ahmedabad

Faculty Members from NITTTR

- **Prof. (Ms.) Susan S. Mathew**, Associate Professor, Department of Electrical and Electronics Engineering
- **Prof. Dr. S.K.Gupta**, Professor and Coordinator for Gujarat State