

Course Code	Course Title	L	T	P	C
1152BM117	Health informatics	3	0	0	3

Course Category: Program Electives

Preamble: This course introduce the health information system, medical data, ethical issues

Pre-requisite:Basic programming

Links to the courses:DICOM, Soft Computing

Course outcomes:

S. No.	Course outcome	Skill level
1.	Explain the concept of Medical informatics	K2
2.	Describe the different medical database and standard available	K2
3.	Explain how soft computing is applied in medical informatics	K2
4.	Create webpage for some medical applications	K4
5.	Explain the application of various gizmos used in health care	K2

CO-PO mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1			L									
CO2		L	L	L								
CO3		L	L									
CO4		ML	H		M				L			M
CO5		L	L			L						L

UNIT I INTRODUCTION TO MEDICAL INFORMATICS

Introduction to Medical informatics-overview, Hospital information system- characteristics and functional online and offline modules, health informatics, virtual hospital, e-health services, Body area networks, health grid

UNIT 2 MEDICAL DATA AND STANDARDS

Electronic Patient Record (EPR) - Integrated clinical data - Biosignal and Medical image formats -Medical data storage and retrieval techniques – Steganography, - Medical Standards – HL7 –DICOM - IEEE 1073 - IRMA - LOINC - ICD10 - Medical standard organizations

UNIT 3 SOFT COMPUTING

Machine learning- Fuzzy logic – its applications in Medicine, Physiological System Modeling and Simulation, Virtual, Reality and Multimedia Applications in Medicine, Biometrics - Biometric Devices – Physiological, Characteristic Devices - Behavioral Characteristic Devices - Feature extraction and Decision making Social issues

UNIT 4 INTERNET AND WEB

Introduction to internet-facilities used on the internet-www- web browsers, introduction to network basics LAN, wan, protocol. Medical Networks - Java script programming - Web Design and programming - Design of Web portal services in medicine.

UNIT 5 FUTURE TECHNOLOGY AND ETHICAL ISSUE

The Personal Health Record Smart e Cards, Wireless, RFID and all sorts of gizmos, Accessibility, Confidentiality, Equity & Equality, Health as a Human Right.

REFERENCE

- RamachandraLele, Computers in Medicine Progress in Medical Informatics, Tata McGraw HillPublishing Company, New Delhi, 2005
- Herbert Schildt, The Complete Reference – JAVA, Tata McGraw Hill Publishing Company, NewDelhi, 2005
- H M Dietel, Internet and World Wide Web, AB Goldberg publishers, New Delhi, 2007
- Ranjan Parekh, Principles of Multimedia, Tata McGraw Hill Publishing Company, New Delhi, 2006
- Tay Vaughan, Multimedia – Making it Work, Tata McGraw Hill Publishing Company, New Delhi,2006
- Raif Steinmetz, Multimedia – Computing, Communications and Applications, Pearson Education,New Delhi, 2007
- Deitel, “Java How to Program”, Pearson Education / PHI, 2006.
- A S Godbole A Kahate, “Web Technologies, TCP/IP to Internet Application Architectures”, TMH2007

TEXT BOOKS

- Mohan Bansal M S, Medical Informatics, Tata McGraw Hill Publishing Company, New Delhi, 2005