

20BT018**BIOMEDICAL AND HEALTH
INFORMATICS**

Hours Per Week :

L	T	P	C
3	-	-	3

Total Hours :

L	T	P	WA/RA	SSH/HSB	CS	SA	S	BS
45	-	-	-	-	-	-	-	-

Course Description and Objectives:

The objective of this course is to provide insights into the applications of computers in storage of biomedical data, managing health information infrastructure, health care organizations and personal health records.

Course Outcomes:

Upon successful completion of the course, the students will be able to:

- acquire, store and use biomedical data.
- understand the applications of computer in healthcare and biomedicine.
- gain knowledge on ethics in biomedical and health informatics.
- understand the functioning of electronic health record systems and management of information in health care organizations.

SKILLS:

- ✓ Acquire biomedical data.
- ✓ Analyze electronic health records.
- ✓ Analyze public health informatics.

UNIT - I

INTRODUCTION TO BIOMEDICAL INFORMATICS: Biomedical Informatics - the science and the pragmatics; Biomedical data - acquisition, storage and use; Biomedical decision making; Probabilistic clinical reasoning;

UNIT - II

STANDARDS IN BIOMEDICAL INFORMATICS: Computer architectures for health care and biomedicine; Software engineering for health care and biomedicine; Standards in biomedical informatics; Natural language processing in health care and biomedicine.

UNIT - III

BIOMEDICAL AND HEALTH INFORMATION RESOURCES: Biomedical imaging informatics; Ethics in biomedical and health informatics; Evaluation of biomedical and health information resources.

UNIT - IV

INFORMATION MANAGEMENT: Electronic health record systems; Health information infrastructure; Management of information in health care organizations; Patient-centered care systems; Consumer health informatics and personal health records.

UNIT - V

HEALTH CARE MANAGEMENT: Telehealth; Patient monitoring systems; Information retrieval and digital libraries; Clinical decision- support systems; Computers in health care education.

TEXT BOOK:

1. E.H. Shortliffe and J.J. Cimino, "Biomedical Informatics", 4th edition, Springer Publishers, 2014.

REFERENCE BOOK:

1. K. A. Wager, F.W. Lee and J.P. Glacer "Information systems: A practical approach for health care management", 3rd edition, Wiley publishers, 2013.

ACTIVITIES:

- Acquire biomedical imaging data.
- Evaluate biomedical and health information resources.
- Use natural language processing in biomedicine.