

# GUJARAT TECHNOLOGICAL UNIVERSITY

## Biomedical Engineering

### M.E. Semester: II

Subject Name: **Virtual Biomedical Instrumentation System**

Sr. No.	Course Content
1.	Introduction to Virtual Biomedical Instrumentation
2.	Hardware and Software Benefits and Limitations
3.	Architecture and Systematic Representation
4.	Data Acquisition In Biomedical Instruments
5.	Storage and Retrieval of medical and paramedical data of Patient
6.	Reduction and Transformation of medical and paramedical data
7.	Mathematical Operations for Virtual Instrumentation
8.	Pattern Recognition for matching of symptoms with known knowledgebase
9.	Limit Detection
10.	Statistical Analysis of Patient data
11.	Data Presentation
12.	Hard and Soft control functions
13.	Synthetic Instruments

#### Reference Books:

1. Virtual bio-instrumentation: biomedical, clinical, and healthcare applications in LabVIEW Jon B. Olansen, Eric Rosow , Prentice Hall, 2002
2. The biomedical engineering handbook Joseph D. Bronzino, Springer, 2000  
88 Virtual Instrumentation: Applications in Biomedical Engineering  
Eric Rosow, Joseph Adam.
3. Advances in Biomedical Sensing, Measurements, Instrumentation and Systems  
Subhas Chandra Mukhopadhyay, Springer, 2010