

SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc (Instrumentation & Control)
Semester: III
Syllabus with effect from – June - 2016

Paper Code: PS03CINC01	Total Credit: 4
Title Of Paper: Biomedical Instrumentation	

Unit	Description in Detail	Weightage (%)
I	Medical Instrumentation System, Constraints in Design of Medical Instrumentation System, Origin of Bioelectric Signals, Recording Electrodes, Electrocardiograph (ECG), Phonocardiograph (PCG), Electroencephalograph (EEG), Electromyograph (EMG)	25%
II	Biofeedback Instrumentation, Beside Patient Monitoring Systems, Heart Rate Meters, Measurement of Pulse Rate, Blood Pressure Measurement	25%
III	Arrhythmia Monitor, Ambulatory Monitoring Instruments, Methods of Monitoring Foetal Heart Rate, Monitoring Labour Activity, Telemetry System, , Implantable Telemetry System for Blood Pressure & Blood Flow	25%
IV	Oximeters, Types of Blood Flow Meters, Spirometry Types, Pulmonary Function Analyzer, Measurement of Blood pH, pCO ₂ , pO ₂ , Complete Blood-Gas Analyzer, Audiometer, Patient Safety: Effect of Electric Current on Human Body, Types of Leakage Current, Precautions to minimize Electric Shock Hazard, Testing of Biomedical Equipment	25%

Basic Text & Reference Books:-

- Handbook of Biomedical Instrumentation, II-Edition, R. S. Khandpur, Tata McGraw-Hill.
- Biomedical Instrumentation and Measurements, Leslie Cromwell, Fred J. Weibell & Erich A. Pfeiffer, Prentice Hall of India.
- Introduction to Biomedical Instrumentation and Measurement Technology, Carr, Brown, Pearson Education.
- Medical Instrumentation Application and Design, III-Edition, John G. Webster-Editor, John Wiley & Sons, INC.
- Biomedical Transducers and Instruments, Tatsuo Togawa, Toshiyo Tamura & P. Ake Oberg, CRC Press.

