Name of the Faculty : Mr. Punjab Singh
Discipline : Electronics and Communication Engg.
Semester : 4th Semester
Subject : Medical Electronics
Lesson Plan Duration :

Lesson Plan

Work Load (Lecture/ Practical) per week (in hours): 03 HOURS (Lecture)03 Hours per Group (PRACTICAL)

Week	Theory		Practical
	Lecture No	Topic (including assignment/ test)	Topic
1st	1st Lecture	Introduction about subject	Introduction to the subject practicals.
	2nd Lecture	UNIT 1:classification of medical Equipments	
	3rd Lecture	application and specifications of diagonstic	
2nd	4th Lecture	Therapeutic and clinical laboratory equipment	To operate and familiarization with: a)B.P. Apparatus b) ECG machines
	5th Lecture	Method of operation of these instruments	
	6th Lecture	Typical waveforms & signal characteristics	
3rd	1st Lecture	UNIT 2: Electrodes	To operate and familiarization with: a)Ventilator b) Incubator
	2nd Lecture	origin of Bioeletric signals, Bioelectrodes	
	3rd Lecture	Electrode tissue interface, contact impedeance	
4th	4st Lecture	Types of electrodes, biological amplifiers	To measure the concentration of blood sugar with Glucometer (fasting,P.P Random)
	5thLecture	Electrodes used for ECG,EEG,EMG	
	6th Lecture	UNIT 3:Bio transducer & Biosensors	
5th	7thh Lecture	Typical signal from physiological parameters	To measure a) Respiration rate and interface to PC (B) Pulse rate
	8th Lecture	Classfication of Bio trancducers	
	9th Lecture	Revision	
6th	1st Lecture	1st Sessional Test	Logging of various body parameters in SD card as excel format
	2nd Lecture	Pressure transducer, photoelectric transducer	
	3rd Lecture	Transducer for body temperature measurment	
7th	4th Lecture	Pulse sensor ,respiration sensor	To measure the EMG signals and interface with PC
	5th Lecture	UNIT 4:BIO Medical Recoders	
	6th Lecture	Electrocardiograph(ECG)Machine	
8th	7th Lecture	Electroencephalograph(EEG)Machine	Body temperature measurement and recording in excel form in PC
	8th Lecture	Electromyography (EMG) Machine	
	3rd Lecture	Phonocardiogram(PCG)	
9th	1st Lecture	Vector cardiogram(VCG)	To study the body position and interfacing of body position sensor and data recording
	2nd Lecture	Digital stethoscope	
	3rd Lecture	UNIT 5:Patient Monitoring system	
10th	4th Lecture	Heart rate measurement	Installation of small medical equipments in laboratory of Hospitals precaution undertaken.
	5th Lecture	Pulse rate measurement	
	6th Lecture	Respiration rate measurement ,blood pressure measurement	
11th	1st Lecture	2nd sessional Test	Study of large medical equipment in Hospitals/Nursing homes
	2nd Lecture	Need of defibrillator and cardiac pace marker	
	1st Lecture	Bedside patient monitoring system	
12th	2nd Lecture	Revison	Operation and use of And use of physiotherphy
	3rd Lecture	UNIT 6 : Modern Imaging System	
	4th Lecture	X-Ray Machine	
13th	5th Lecture	Magnetic Resonance Imaging System	Maintenance schedule for different equipments and recoders in a hospital
	6th Lecture	Ultrasonic Imaging System	
	3rd Lecture	UNIT 7: Patient Safety	
14th	1st Lecture	Electric shock hazard,leakage current	Getting body parameters bluetooth to andriod App and pc
	2nd Lecture	Electrical safety analyzer	
	3rd Lecture	Safety standard	
15th	1st Lecture	3rd Sessional test	Creating body Area network using Zigbee devices
	2nd Lecture	Revision	
	3rd Lecture	Revision	