

Semester Plan

Course Title & Code: Biomedical Signal Processing (68643)
Semester/Shift/Group: 4th / 2nd (A+B)
Teacher: Engr. Shirin siraj
Lab/Room: According to class Routine

Consultation/Contact Time: According to class Routine

Course Outline: Biomedical signal of human body, medical display system, Electrocardiogram, Electroencephalogram, Electromyogram, Electroneurogram. Electrooculogram, measurement of blood pressure, patient monitoring system.

Teaching Method: Lectures, Assignments, Interactive Sessions, Presentations.

Prerequisites: Passed 3rd Semester Electromedical Technology.

Week	Theory			Practical		
	Content	Activity		Content	Activity	
	General Objectives	Test / Quiz	Teaching Materials	Name of the Experiment	Resources, Place, Tutorials, Methodology, Reference Books, Viva, Job Sheet	Expt. No.
1	Understand the biomedical signal of human body.		Reference Book, Marker Pan, White Board, Multimedia	1	Identify different biomedical electrodes.	ECG Electrods, EEG Electrodes, EMG Electrods.
2	Understand the medical display and recording system.			1	Preview	ECG Electrods, EEG Electrodes, EMG Electrods.
3	Understand the concept of Electrocardiogram (ECG).			2	Demonstrate the operation and troubleshooting of ECG machine.	ECG machine
4	Understand the concept of Electrocardiogram (ECG).	Class Test -1		2	Demonstrate the operation and troubleshooting of ECG machine.	ECG machine
5	Understand the concept of electroencephalogram (EEG).			3	Demonstrate the operation of EEG machine.	EEG machine
6	Understand the concept of electromyogram (EMG)			4	Demonstrate the operation of EMG machine.	EMG machine
7	Class Preview	Quiz Test - 1			Preview	Related Equipment
8	Understand the concept of Electroneurogram, Electrooculogram Electroratingram			5	Demonstrate the operation and troubleshooting of EOG machine.	EOG machine
9	Mid Term Exam					
10	Understand Electrogastragram (EGG) and Carotid pulse.	Class Test -2			Preview	Related Equipment
11	Understand the concept of blood pressure measurement.			6	Demonstrate the operation and troubleshooting of pulse beat monitor.	pulse beat monitor
12	Understand patient monitoring system.			7	Demonstrate the operation and troubleshooting of bed side monitor.	bed side monitor
13	Understand biomedical signal analysis.	Quiz Test - 2		8	Identify different biomedical sensors.	IBP, NIBP, SPO2 Sensors
14	Class Preview & Evaluation				Preview	Related Equipment
15	Class Preview & Evaluation				Preview	Related Equipment
16	Class Preview & Evaluation				Preview	Related Equipment

Reference Books:
 1. Biomedical signal analysis - Rangaraj M. Rangayyan
 2. Introduction to Biomedical Equipment Technology - Joseph J. Carr

Assessment Method:

Components	Weightage	
	Theory	Practical
Quizzes/Viva		5
Class Test		
Class Participation		5
Assignments/Report Writing		15
mid term	20	
Continuous Assessment	20	25
Final	60	25
Total	100	50

Students' Responsibilities: Following the classes regularly and study the reference books.