Sample Brief Course Description	
Course title	Biomedical Digital signal processing
Course code	BME 443
College	Engineering
Department / Program	Biomedical Engineering
Year/ Level	5/13
Course Type	**A.** ☐ University ☐ College ■ Department ☐ Others b. ☐ Required ■ Elective
Credited Hours	4
Contact Hours	(LT: 3, LB: 2, TR: 0)
Pre-requisites (if any)	BME 240
Co-requisites (if any)	---
Course description	Topics include: Introduction to Digital Signal Processing techniques: Sampling and aliasing, Signal reconstruction, convolution - Correlation - FFT - decimation in time algorithm, Decimation in Frequency algorithm. Introduction to biomedical signals: Nature of biomedical signals - Examples of biomedical signals-EEG, EMG,ECG, VMG, VAG, evoked potentials, Event Related Potentials, Speech Signal, Objectives and Difficulties of Biomedical Signal Analysis.

	.Analog Filter Design. Design of Digital filters. Realization of Digital Filter. Analysis of Bio signals: Cardiological Signal Processing, Methods in Recording ECG , Waves and Intervals of ECG, ECG Data Acquisition , ECG Parameters and Their Estimation, ECG QRS Detection Technique, Estimation of R-R Interval, Estimation of ST Segment, Analysis of PCG signal, Analysis of EMG signal and EEG Signal.
Course Main Objectives	1. Know the basic concepts of Bio signal Processing. 2. Learn about the filtering techniques used in Medical Signal Processing 3. Understand the Applications of Signal Processing for Diagnosis.
Learning Outcomes	**Knowledge and Understanding:** 1. Summarize the basic concepts of digital signal processing techniques. 2. Identify the nature of Biomedical signals. 3. Understand various Techniques for Detection of Events.
	Skills:--- 1. Apply the Filtering Techniques. 2. Analyze the Noise Cancellation Techniques for Bio signals. 3.Develop systems for Bio signal Acquisition and Analysis
	Values:--- 1. Communicate effectively on a team.