Course Syllabus

Department offering the program: Industrial electronics and Control Engineering
Department offering the course: Industrial electronics and Control Engineering

Course basic information :		
Course Code: AC446	**Course Title:** Experimental Lab-3	**Level : (4)** **Semester : 2**
Department requirement	**Teaching hours: Lecture[1] Tutorial [0] - Lab [3]**	
Course objectives	1. To acquire hands-on experience on building an ECG, EMG, EOG measurement device. 2. To prepare how the biopotential amplifier works in practice and the design principles affecting the measurement. 3. To demonstrate how different interference/noise sources affect the measurement. 4. To perform experimental assignments concerning sensors characteristics.	
Course Contents	Introduction-Skin Electrical Resistance and Physiological Response to Stimulation-Body temperature Measurement, Pulse Measurement and Respiratory Rate Measurement-Electrocardiogram (ECG) – Electromyogram (EMG) – Electro Oculogram. (EOG) - Ultrasonic Sensor Experimentation - Humidity Sensor Experimentation - pt100 temperature sensor experimentation - Pressure Sensor Experimentation-Sonar Device-Kidney Device-X-Ray Device-Revision	
Assessment		

Weighting of Assessment	• Written examination: 45 %
	• Semester Work
	  ○ Mid-term examination: 10 %
	  ○ Practical/laboratory work: 10 %
	  ○ Other Assignments/class work : 5 %
	• Oral Examination: 30 %
	Total 100 %	

List of text books and references:	
Text books	• John Enderle , Joseph Bronzino, Introduction to biomedical engineering, Taylor and Francis Group, 2011
Recommended books	• Cromwell, Biomedical Instrumentation and Measurements, TSTC Publishing, Dec 1, 2010