TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

This Course Specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and   demonstrate if he/she takes full advantage of the learning opportunities that are provided. It should be cross-referenced with the programme specification.

1. Teaching Institution	Baghdad University- Al-Khwarizmi College of Engineering
2. University Department/Centre	Biomedical Engineering
3. Course title/code	BioSensors
4. Programme(s) to which it contributes	BSc in Biomedical Engineering
5. Modes of Attendance offered	Full time attendance
6. Semester/Year	2 semesters per year
7. Number of hours tuition (total)	30 hours in each semester
8. Date of production/revision of this specification	
9. Aims of the Course	
By the end of this course, The students will be able to: 1- know the theory and background of biomedical sensors such as electrodes,, thermal sensors , chemical sensors and others biomedical sensors 2- Know the applications and operations of Biosensors such as EEG, EMG, PPG and ECG) sensors.	

3- Learn about the specific analysis devices such as spectroscopy, spectophotometry and gas analyzer.

4- Learn about the specific sensors for anesthesia and the sensors in the operational rooms.

10· Learning Outcomes, Teaching ,Learning and Assessment Methods

A- Knowledge and Understanding

A1.
A2.
A3.

B. Subject-specific skills
B1.
B2.
B4.

Teaching and Learning Methods

• Lectures where the students write information presented to them via slide show, overhead or written by the lecturer;
• Lectures where the students have some printed notes/handouts and may annotate, or expand these during a spoken lecture;
• Question and answer sessions during lectures or staff Office Hours;
• Laboratory sessions.

Assessment methods

• Written examinations (Summative assessment);
• Oral presentations of individual and group work;
• Homework;
• Practical skills will be assessed through laboratory experiments, write-ups, coursework reports, project reports and presentations;
• Presentation skills through group presentations and poster presentationsto improve their soft skills such as problem solving, team work, time management and presentation skills.

C. Thinking Skills
C1.
C2.
C3.
C4.

Teaching and Learning Methods
External lectures from industry or clinicians; • Feedback given to students during tutorials; • Question and answer sessions during lectures or staff Office Hours; • Completion of web-based exercises or computer based laboratory sessions;
Assessment methods
Individual written project report(s) of both individual and group projects; • Practical skills will be assessed through laboratory experiments, write-ups, coursework reports, project reports and presentations; • Presentation skills through group presentations and poster presentations.

D. General and Transferable Skills (other skills relevant to employability and personal development)
D1. D2. D3.
Teaching and Learning Methods
• Lectures where the students have some printed notes/handouts and may annotate, or expand these during a spoken lecture; • Lecture material placed on web-pages or other e-learning environment; • External lectures from industry or clinicians; • Question and answer sessions during lectures or staff Office Hours;
Assessment Methods
• Practical skills will be assessed through laboratory experiments, write-ups, coursework reports, project reports and presentations; • Presentation skills through group presentations and poster presentations.

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
Week	Date	Topes Covered		Lab. Experiment Assignments	Notes
1		Bioanalytical Sensors			
2					
3		Optical Fiber and optical biosensors			Quiz 1
4		Immunoassay biosensors			
5		Spectrophotometry And spectroscopy			
6		Seminar activity and group presentations			
7		Fluorescence biosensors			
8		Piezoelectric and its Application in BioSensors			Quiz 2
9		Visit the laboratory (Practical application)			Seminar
10		Seminar			
11		Anesthesia Machine I			Quiz 3
12		Anesthesia Machine II			
13		The type of the BioSensors during surgeries			Seminar
14		The type of the BioSensors in the operation rooms			
15		Exam Mid 2			
16		Seminar			

12. Infrastructure	
	1- Introduction to Biosensors: From Electric Circuits to Immunosensors, Jeong-Yeol Yoon. Springer.

13. Admissions	
Pre-requisites	**BioSensors**
Minimum number of students	**10**
Maximum number of students	**40**

Community-based facilities
include for example
(guest, Lectures , internship , field studies)