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	Biomedical Engineering department
2. University Department/Centre	University of Baghdad
3. Course title/code	Electromagnetic fields
4. Programme(s) to which it contributes	B.Sc. in Biomedical Engineering
5. Modes of Attendance offered	Full time
6. Semester/Year	Semester
7. Number of hours tuition (total)	45
8. Date of production/revision of this specification	2021
9. Aims of the Course	
The aim of this headquarters is to prepare an engineer who can understand, estimate and provide solutions for a wide range of electromagnetic field problems in the practical environment, as well as to provide a basis for understanding the electromagnetic fields and their relationship with human body. Additionally, to explain to students how electromagnetic fields and their applications can be applied in medical equipment and medicine in general.	

10· Learning Outcomes, Teaching ,Learning and Assessment Methods

A- Knowledge and Understanding

A1. Understand how electromagnetic fields are produced.
A2. Make the students familiar with how various charge distributions can affect its surroundings based existing media.√
A3. Make the students able to assess and measure voltages based their source and the surrounding parts at different positions.
A4. Make students able to imagine the positions of sources and how they affect the destination which are normally sensing units.

B. Subject-specific skills

B1.√**Solid knowledge of multiple integrals and various coordinate systems.**
B2.

Teaching and Learning Methods

1- Lecture notes.
2- Internet based homeworks.

Assessment methods

1- Short tests (2).
2- Long test (1).
3- Research report.

C. Thinking Skills

C1. Problem solving.
C2. Homework leading to report preparation.

Teaching and Learning Methods

We use the blackboard and wide screen to introduce the students to this course, we also let the students to participate in the problem solving process in the class and by giving them homeworks.

Assessment methods

Quizzes and midterm examinations

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1. √**The most important skill students can acquire during this course is building their self-confidence by making them prepare a report about a research they find in the internet. Selecting the proper report directly related to the course material is difficult and really important to make the students feel responsible about the chosen research, where they have to prepare the report and discuss it with the instructor using face-to-face contact.**

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
١	4		**Introduction**	Lecture	
٢	4		**X,Y, Z coordinates**	Lecture	
٣	4		**Cylindrical coordinates**	Lecture	
٤	4		**Spherical coordinates**	Lecture	
٥	4		**Vectors analysis**	Lecture	
٦	4		**Coulomb's law**	Lecture	
٧	4		**Electrical Forces**	Lecture	Test (short test)
٨	4		**Electrical Field Intensity**	Lecture	
٩	4		**Point, Line, surface charge**	Lecture	Test (long test)
١٠	4		**Electrical filed density**	Lecture	
١١	4		**Flux**	Lecture	
١٢	4		**Flux intensity**	Lecture	
١٣	4		**Guesses law**	Lecture	
١٤	4		**Energy and potential**	Lecture	Test (short test)
١٥	4		**Potential field of a point, line and sheet charges**	Lecture	Report preparation

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	1- Engineering electromagnetic, W. Hayt, 6th edition, 2006. 2- Classical Electromagnetic Theory, 2nd edition, J. Vanderlinde, Canada, 2011. 3- Electricity and Magnetism, B. Crowell, 2007.
Special requirements (include for example workshops, periodicals, IT software, websites)	
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	Mathematics III and IV
Minimum number of students	10
Maximum number of students	40