

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	Al- Mansour University College
2. University Department/Centre	Communication Engineering Department
3. Course title/code	Electromagnetic Fields Theory
4. Programme(s) to which it contributes	
5. Modes of Attendance offered	Weekly – Lectures
6. Semester/Year	Second Semester / 2020 - 2021
7. Number of hours tuition (total)	45 Hours
8. Date of production/revision of this specification	28-6-2021
9. Aims of the Course	
Graduating cadres with the necessary foundations to work in the field of communications, whether in the practical or academic aspects.	

10- Learning Outcomes, Teaching ,Learning and Assessment Methode
<p>A- Knowledge and Understanding</p> <p>A1. A1- Understand the subject of electromagnetic fields in general. A2- Learn how to deal with the electric and magnetic fields separately. A3- Linking the electric and magnetic fields within the electromagnetic field. A4- Studying the wave motion of the electromagnetic field within the subject of electromagnetic wave propagation, which is one of the basics of communications.</p>
<p>B. Subject-specific skills</p> <p>B1. B1 - B1 - Training the student to deal with different practical situations by solving problems in this direction. B2 - Training the student to take advantage of the academic foundations to advance to advanced methods and techniques that are directed towards graduation projects.</p>
Teaching and Learning Methods
<p>1- Theoretical lectures with solving various practical examples.</p> <p>2- Homework.</p>
Assessment methods
<p>1- Assessment of class exercises</p> <p>2- Evaluation of extra-curricular exercises</p> <p>3- Semester exams</p>
<p>C. Thinking Skills</p> <p>C1- Training students on the behavior of the scientific approach in investigation and research.</p> <p>C2 - Training students on scientific reasoning about dealing with different issues and situations.</p>

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

D1- Enable the student to obey the foundations he has received in order to be able to apply them in different aspects of life.

D2 - Develop the student's ability to adopt these foundations so that he is able to transfer them to others.

11. Course Structure

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1-2	6	Introduction to electric current	Current and Current Density	Theoretical lectures	class homework and assessment exams
3-4	6	Dealing with charges and conductors	The Method of Images	Theoretical lectures	class homework and assessment exams
5-6	6	Understanding insulators	Dielectric Materials	Theoretical lectures	class homework and assessment exams
7-8	6	Understanding magnetic fields effects	Magneto static Fields	Theoretical lectures	class homework and assessment exams
9-10	6	Understanding variable fields	Time- Varying Fields and Maxwell's Equations	Theoretical lectures	class homework and assessment exams
11-12	6	Wave properties	Wave Equation for Time- Varying Fields	Theoretical lectures	class homework and assessment exams
13-14	6	Waves in materials	Wave Propagation in Dielectric and Conductors	Theoretical lectures	class homework and assessment exams
15	3	Effect of boundaries and media	Waves at Boundaries and Dispersive Media	Theoretical lectures	class homework and assessment exams

12. Infrastructure

Required reading:

- CORE TEXTS
- COURSE MATERIALS
- OTHER

Theory and Problems of Electromagnetics, by Joseph A. Edminister
Fundamentals of Applied Electronics , by Fawwaz