



Course Specifications

Muharram 1437 H

Institution:	Majmaah University
Academic Department :	Electrical Engineering
Programme :	communication and power tracks
Course :	Electromagnetics II
Course Coordinator :	Dr. Yazeed Qasaymeh
Programme Coordinator :	.....
Course Specification Approved Date :	11/3 / 1437 H



A. Course Identification and General Information

1 - Course title :	Electromagnetics II	Course Code:	EE 234
2. Credit hours :	(3)		
3 - Program(s) in which the course is offered:	communication and power tracks		
4 – Course Language :	English		
5 - Name of faculty member responsible for the course:	Yazeed Qasaymeh		
6 - Level/year at which this course is offered :	Level 6 , year 2		
7 - Pre-requisites for this course (if any) :	EE 206		
8 - Co-requisites for this course (if any) :	<ul style="list-style-type: none"> 		
9 - Location if not on main campus :	College of Engineering		
10 - Mode of Instruction (mark all that apply)			
A - Traditional classroom	<input checked="" type="checkbox"/>	What percentage?	100%
B - Blended (traditional and online)	<input type="checkbox"/>	What percentage? %
D - e-learning	<input type="checkbox"/>	What percentage? %
E - Correspondence	<input type="checkbox"/>	What percentage? %
F - Other	<input type="checkbox"/>	What percentage? %
Comments :	<ul style="list-style-type: none"> 		

B Objectives

<p>What is the main purpose for this course?</p> <p>To understand basic concepts of wave propagation and apply mathematical concepts of vector analysis to the time dependent solution of electromagnetic engineering. In addition, to apply high level mathematics in the solution of engineering problems making use of Maxwell's equations in applications involving reflection, transmission, and oblique incidence of plane waves, transmission lines, waveguides, and boundary value problems in electromagnetics.</p> <p>Briefly describe any plans for developing and improving the course that are being implemented :</p> <ul style="list-style-type: none"> Showing some online videos about visualizing wave propagation. Linking theory with practical applications for Maxwell's equations.



C. Course Description

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
Maxwell's Equations and Waves	3	12
Plane waves	3	12
Transmission Lines	3	12
Waveguides	3	12
Antennas	3	12

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	45	15	0	0	0	60
Credit	3	0	0	0	0	3

3. Additional private study/learning hours expected for students per week.

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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	.....	.....	.....
1.2	.....	.....	.....
1.3	.....	.....	.....
1.4	.....	.....	.....
1.5	.....	.....	.....
1.6	.....	.....	.....
2.0	Cognitive Skills		
2.1	.....	.....	.....
2.2	.....	.....	.....
2.3	An ability to identify, formulate, and solve engineering problems	Lecture, small group work, , research activities, lab demonstrations, projects and individual presentation	Standardized exams, Oral exams, Micro projects
2.4	.....	.....	.....
2.5	.....	.....	.....
2.6	.....	.....	.....
3.0	Interpersonal Skills & Responsibility		
3.1	.....	.....	.....
3.2	.....	.....	.....
3.3	.....	.....	.....
3.4	.....	.....	.....
3.5	.....	.....	.....
3.6	.....	.....	.....
4.0	Communication, Information Technology, Numerical		
4.1	An ability to apply knowledge of mathematics, science, and engineering	Lecture, research activities, lab demonstrations, projects, case studies, memorization and individual presentation	Standardized exams, Oral exams, Micro projects





	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
4.2
4.3
4.4
4.5
4.6
5.0	Psychomotor		
5.1
5.2
5.3
5.4
5.5
5.6

5. Schedule of Assessment Tasks for Students During the Semester:

	Assessment task	Week Due	Proportion of Total Assessment
1	Exams	9 th and 14 th	40 %
2	Quizzes and Assignments		20%
3	Final Exam	16 th	40%
4	.....	.....	.....
5	.....	.....	.....
6	.....	.....	.....
7	.....	.....	.....
8	.....	.....	.....





D. Student Academic Counseling and Support

1. Weekly office hours.
2. Exam solving in class.
3. Feedback from each student.
4. Weekly guidelines on student performance.
5. Instructor webpage.

E. Learning Resources

1. List Required Textbooks : <ul style="list-style-type: none"> • Sadiku, Matthew N. O. <i>Elements of Electromagnetics</i>. New York: Oxford University Press, 2001.
2. List Essential References Materials : <ul style="list-style-type: none"> • • •
3. List Recommended Textbooks and Reference Material : <ul style="list-style-type: none"> • ULABY, F. T., MICHELSEN, E., & RAVAIOLI, U. (2010). <i>Fundamentals of applied electromagnetics</i>. Upper Saddle River [etc.], Prentice Hall/Pearson.
4. List Electronic Materials : <ul style="list-style-type: none"> • • •
5. Other learning material : <ul style="list-style-type: none"> • • •

F. Facilities Required

1. Accommodation <ul style="list-style-type: none"> • • •
2. Computing resources <ul style="list-style-type: none"> • A Projector and a laptop in the classroom for the instructor. • A working Smart Boards
3. Other resources





- Books for student's use in the main library.

G Course Evaluation and Improvement Processes

1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching:

- Completion course evaluation questionnaire,
- Classroom observations to measure student behavior through how well the student groups are interacting in-class activity and how well the in-class activity went.

2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor :

- Faculty Peer Assessment

3 Processes for Improvement of Teaching :

- Plan: The instructor will develop a strategy for teaching.
- Do: The strategy will be implemented for one semester.
- Study: The experiences of the students will be collected through a survey.
- Act: Effective teaching strategies will be implemented and revised as more experiences are gained.

4. Processes for Verifying Standards of Student Achievement

Check marking of a sample of examination papers

5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement :

- Continuous improvement is a circular process, encompassing student assessment, course planning and design, implementation, evaluation, and revision.
- A feedback from all relevant assessment tools must be considered in the continuous process of course objectives refinement and assessment.
- Continuous process for reviewing feedback from student on the quality of the course and planning for improvement.

Course Specification Approved

Department Official Meeting No (.....) Date ... / / H

Course's Coordinator

Name : Dr Yazeed Qasaymeh
Signature :
Date : 11/ 3 /1437 H

Department Head

Name : Dr Abdullah Almuhasien
Signature :
Date : .../ ... / H

