



**College:** Engineering

**Programme Electrical Engineering** 

**Course:** Electromagnetics II

Muharram 1437 H





# **Course Report**

Institution: Al Majmaah University Date of CR 23 /1 / 2017.

College/ Department Engineering / Electrical Engineering

# **A Course Identification and General Information**

1. Course tit	le: Electro	magnetics II	Code	EE 234	Section	106
2. Name of c	ourse instruct	tor Dr. M	ohamed O	<mark>uda</mark> Loca	tion: Al Y	ahya
					Build	ding
3. Year and s	3. Year and semester to which this report applies: Spring 2016					
4. Number of	f students star	ting the	10	Students comple	eting the	5
course?				course?	_	
5. Course components:						
	Lecture	Tutorial	Laborator	Practical	Other	Total
			Studio			
Contact Hours	45	15	0	0	0	60
Credit	3	0	0	0	0	3

# **B- Course Delivery:**

#### 1. Coverage of Planned Program

Topics Covered	Planned Contact Hours	Actual Contact Hours	Reason for Variations (*)
Time varying fields; Faraday's law, Transformer and motional emfs; Displacement current; Maxwell's Equations.	16	16	
Waves Maxwell's equations and time harmonic fields; Wave equation; Power transfer and Poynting vector; Plane wave propagation in free space, in lossy dielectrics and in good conductors; Polarization; Reflection of plane wave at normal and oblique incidence;	16	16	
Transmission lines; Impedance matching	12	12	
Waveguides	8	8	

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Introduction to radiation and	8	8	
antennas; Antenna parameters; Wire			
antennas			

<sup>(\*)</sup> if there is a difference of more than 25% of the hours planned

#### 2. Consequences of Non-Coverage of Topics

Topics not Fully Covered (if any)	Effected Learning Outcomes	Possible Compensating Action

#### 3. Course learning outcome assessment.

	List course learning outcomes	List methods of assessment for each LO	Summary analysis of assessment results for each LO
1.0	Knowledge		
1.1			
1.2			
1.3			
1.4			
1.5	•••••		
1.6			
2.0	Cognitive Skills		
2.1	Analyze Plane Waves propagation through various		
	media by apply the general Maxwell's Equations.		
2.2	Determine the dielectric and magnetic properties of		
	given materials		
2.3	Apply the boundary conditions for electric and		
	magnetic fields at dielectric interfaces		
2.4	Solve Transmission line problems using EM field	Standardized	75%
	theory and electric	exams,	
	circuit theory	Seminars and	
2.5	Analyze transmission lines by applying the	Assignment	
	transmission-line equations and characteristic		
	quantities and Smith chart.		
2.6	Analyze the use of rectangular waveguide to guide		
	electromagnetic waves.		
2.7	Determine the radiated field and the radiation		
	parameters of Hertzian dipole and the half-wave		
	dipole.		
3.0	Interpersonal Skills & Responsibility		

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	List course learning outcomes	List methods of assessment for each LO	Summary analysis of assessment results for each LO
3.1			
3.2	••••••		
3.3	••••••	•••••	• • • • • • • • • • • • • • • • • • • •
3.4	••••••	•••••	• • • • • • • • • • • • • • • • • • • •
3.5		•••••	
3.6			
4.0	Communication, Information Technology, Numerical		
4.1	Apply knowledge of transformer and motional	Standardized	
	electromotive forces, displacement currents and	exams,	60%
	time varying Maxwell's Equations	memorization	
		and individual	
4.2	Determine the radiated field and the radiation	presentation	
	parameters of Hertzian dipole and the half-wave	-	
	dipole.		
4.3			
4.4	•••••		
4.5			
4.6			
5.0	Psychomotor		
5.1			
5.2			
5.3		•••••	••••
5.4		•••••	
5.5		•••••	•••••
5.6		•••••	

Summarize any actions you recommend for	improving teaching strategies as a result of
evaluations in table 3 above.	


# **4.** Effectiveness of Planned Teaching Strategies for Intended Learning Outcomes set out in the Course Specification



	No	Yes	Difficulties Experienced (if any) in Using the Strategy and Suggested Action to Deal with Those Difficulties.
Giving Lectures,		X	
Group discussion		X	
Practical project		X	

# C. Results

# 1. Distribution of Grades

Letter Grade	Number of Students	Student Percentage	Analysis of Distribution of Grades
<b>A</b> +	1	17%	
A	1	17%	
<b>B</b> +	0	0	First exam 20%
В	1	17%	Second Exam 20% Quizzes & Homework 10%
C+	0	0	Project 10% Final exam 40%
С	0	0	Total 100%
D+	0	0	The distribution fit a normal distribution curve
D	2	33%	
F	1	17%	
Denied Entry	3	30%	
In Progress	0	0%	
Incomplete	0	0%	
Pass	5	50%	
Fail	1	10%	

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Withdrawn	1	10%	

# 2. Analyze special factors (if any) affecting the results

•	Group discussion and the practical project helped the students significantly
•	
•	
•	
•	

#### 3. Variations from planned student assessment processes (if any).

a. Variations (if any) from planned assessment schedule (see Course Specifications)

Variation	Reason

#### b. Variations (if any) from planned assessment processes in Domains of Learning

Variation	Reason				

#### 4. Student Grade Achievement Verification:

Method(s) of Verification	Good
colleague review	

# **D.** Resources and Facilities

Difficulties in access to resources or facilities (if any)	Consequences of any difficulties experienced for student learning in the course
Non	

# **E.** Administrative Issues

Organizational or administrative difficulties	Consequences of any difficulties experienced for
encountered (if any)	student learning in the course

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#### F Course Evaluation

#### 1 Student evaluation of the course (Attach summary of survey results)

- a. List the most important recommendations for improvement and strengths
  - Question related to the beginning of the course
  - Clarification of the course relation to other courses in the program.
  - Available during Office hours
  - The lectur
- b. Response of instructor or course team to this evaluation
  - Number of student less than 5 (only 4 student answered the survey) which do not a good reflection.
  - The course is considered a difficult and demanding course that is why the students are usually harsh on evaluation
  - the syllabus will be followed more precisely with a better communication with the students regarding the course.

#### 2. Other Evaluation:

<ul> <li>a. List the most important recommendations for improvement and strengths</li> <li>General evaluation is satisfactory</li> <li></li></ul>
•
b. Response of instructor or course team to this evaluation :
<ul> <li>Work more close with student regarding the course delivery.</li> </ul>
•

# **G Planning for Improvement**

#### 1. Progress on actions proposed for improving the course in previous course reports (if any).

Actions recommended from the most recent course report(s)	Actions Taken	Action Results	Action Analysis
a. Interacting the course with suitable simulation software	Some animations are used	Better understanding	
b. Interacting the course with proper lab facilities	non		



c. the addition of some reference books for the course	Non	

2. Li	ist what	other a	actions	have i	been	taken 1	to im	prove	the	course
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•	More interactive teaching methods were adapted
•	

#### 3. Action Plan for Next Semester/Year

Actions Recommended for Further Improvement	Intended Action Points (should be measurable)	Start Date	Completion Date	Person Responsible
a. Using on line quizzes	Number of quizzes	Week 2	Week 14	Instructor
Adapting active teaching strategies	report	Week 2	Week 14	Instructor
c. the addition of some reference books for the course	the improvement of the course syllabus	Week 1	Week 1	Instructor

#### **Course Instructor:**

Name:	Dr. Mohamed Ouda		
Signature:		Date Report	23/1/2017
		Completed:	

# **Program Coordinator:**

Name:			
Signature:	 Date Received:	/1437 H	

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