



Jordan University of Science and Technology
Faculty of Engineering
Electrical Engineering Department

EE207 Electromagnetic (1) - JNQF Level: 7

Second Semester 2024-2025

Course Catalog

3 Credit Hours. Vector analysis and coordinate systems; Electrostatic fields; Solution of Laplace's and Poisson's equations; Magnetostatic fields; Faraday's law and applications; Maxwell's equations.

Teaching Method: On Campus

Text Book

Title	Elements of Electromagnetics
Author(s)	M. Sadiku
Edition	5th Edition
Short Name	text book
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
reference book	Fundamentals of Electromagnetics with Engineering Applications	Wentworth	1st Edition	
reference book	Engineering Electromagnetics	Hayt and Buck	8th Edition	
reference book	Electromagnetics with Applications	Kraus and Fleisch	5th Edition	
reference book	Introduction to EM Fields	Paul, Whites, and Nasar	3rd Edition	

Instructor

Name	Prof. Mohammed Al Salameh
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Office Location	E2L3
Office Hours	
Email	salameh@just.edu.jo

Instructor	
Name	Prof. Majid Khodier
Office Location	E2L3
Office Hours	
Email	majidkh@just.edu.jo

Class Schedule & Room
<p>Section 1: Lecture Time: Sun, Tue, Thu : 12:30 - 13:30 Room: E2011</p> <p>Section 2: Lecture Time: Sun, Tue, Thu : 10:30 - 11:30 Room: U</p> <p>Section 3: Lecture Time: Mon, Wed : 08:30 - 10:00 Room: E2011</p>

Prerequisites		
Line Number	Course Name	Prerequisite Type
921020	PHY102 General Physics (2)	Prerequisite / Study
821024	HSS102PHY General Physics (2)	Prerequisite / Study
822010	HSS201MATH Intermediate Analysis	Prerequisite / Study
822030	HSS203MATH Ordinary Differential Equations	Pre./Con.
902010	MATH201 Intermediate Analysis	Prerequisite / Study
902030	MATH203 Ordinary Differential Equations	Pre./Con.

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Vector Algebra	
Week 2	Coordinate systems and transformations	
Weeks 3, 4	Vector calculus	
Weeks 5, 6	Electrostatic fields	
Week 7	Electric Fields in Material Space	

Weeks 8, 9	Electrostatic Boundary-Value Problems	
Weeks 10, 11	Magnetostatic Fields	
Weeks 12, 13	Magnetic Forces, Materials, and Devices	
Week 14	Faraday's Law and Maxwell's Equations	

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
The student will be able to apply necessary vector algebra, vector calculus, and coordinate systems in electrostatics and magnetostatics. [1SO1] [1L7K1]	10%	
The student will be able to apply electrostatic laws, boundary conditions, and to calculate electric field and potential from charge distributions. [1SO1] [1L7K1]	35%	
The student will be able to solve electrostatic boundary-value problems of symmetrical charge distributions, and calculate the capacitance and resistance. [1SO1] [1L7K1]	13%	
The student will be able to apply magneto-static laws, magnetic boundary conditions, and to calculate magnetic field from current distributions and the inductance of certain magnetic devices. [1SO1] [1L7K1]	37%	
The student will be able to calculate the induced emf using Faraday's law. [1SO1] [1L7K1]	5%	

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
100						

Relationship to NQF Outcomes (Out of 100%)	
L7K1	
100	

Evaluation	
Assessment Tool	Weight
First Exam	25%
Second Exam	30%
Project	5%
Final Exam	40%

Policy

Attendance	Attendance will be taken every lecture. If your absence exceeds 20%, then the attendance electronic system will prevent you from continuing to attend the course, regardless of your excuses being valid or invalid. You have to attend even if this is not the first time you register for the course.
Exams	First Exam: 25% Second Exam: 12% Third Exam: 13% Quizzes: 10% Final exam: 40%

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