

COURSE OUTLINE

Course Code	20142	20142					
Course Title	Physics (2)						
Course	20141 Physics (1)						
Prerequisite(s)							
Credit Hours	3	3					
Course Type	Lecture						
Course Delivery Method	Face-to-Face						
Required or Elective	Mandatory for all	engineering	programs a	nd computer sc	ience program		
Semester	First semester 2022						
Instructor Name	Khaldoun Tarawne	eh					
Instructor's email	khaldoun@psut.ed	khaldoun@psut.edu.jo					
Instructor's Office Number		1					
Course Schedule	Sunday, Tuesday,	and Thursda	y (10:00-11	1:00)			
Office Hours	Sunday, Tuesday,	and Thursda	y 8:00-10:0	00)			
Assessment Tools &	Assessment Tool	Weight	Additiona	al Information			
Grading Policy	First Exam	20%					
	Second Exam	25%					
	Midterm Exam	N/A					
	Final Exam	40%					
	Homework	5%	Number of	of counted HWs	s: Minimum of 3 HWs		
	Quiz(zes)	10%	Number of	of counted quiz	zes: Minimum of 3		
	Project(s)	N/A	1				
	Other	N/A					
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Catalog Description	Electric Fields, Ga	auss's Law,	Electric P	otential, Capac	itance and Dielectrics,		
Catalog Description	Electric Fields, Ga Current and Resis				etic Fields, Sources of		
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Materials Available to		Student	Department	Instructor
Instructor, Students &	Course Outline	✓	✓	√
Department at End of	Lecture Notes	✓	√	✓
Course	Samples of Students' Work		\	✓
	Course Assessment by Students (CAS)		\	✓
	Course Assessment by Faculty (CAF)		✓	✓

N o	Course Learning Outcomes (CLOs)	Student Outcomes (SOs)
1	Provide and define the fundamental properties of the electric charge, solve technical problems associated with the electrostatic force (Coulomb force), the electric force field, Gauss's Law, the electric potential, and potential difference, within a framework of distributed symmetric charge distributions, using calculus.	1
2	Define electric capacitance and solve technical problems associated with capacitors of various symmetries, capacitors in series and parallel combinations, and the microscopic effect of dielectric materials on capacitance and stored energy.	1
3	Define electric current, and current density, and solve technical problems involving DC networks of resistors, batteries, and capacitors, Ohm's Law, Kirchhoff's Laws, and RC charging and decay circuits.	1
4	Define the magnetic field and magnetic flux, and solve technical problems associated with the effect of static, non-uniform, and uniform magnetic fields on moving charges and current-carrying wires, loops, and the magnetic dipole.	1
5	Calculate the magnitude and direction of the magnetic field for symmetric current distributions using the Law of Biot-Savart and Ampere's Law, and state the limitations of Ampere's Law.	1
6	State Faraday's Law of Induction with Lenz's Law and use these equations to solve technical problems associated with induction.	1

ABET - Student Outcomes (1-7)

- 1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- 2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- 3. an ability to communicate effectively with a range of audiences.
- 4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- 5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- 6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- 7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.