

Course E-Syllabus

1	Course title	General Physics II
2	Course number	0302102
3	Credit hours	3
	Contact hours (theory, practical)	7.5 hours weekly , 0
4	Prerequisites/corequisites	0302101
5	Program title	Physics
6	Program code	
7	Awarding institution	The University of Jordan
8	School	Science
9	Department	Physics
10	Level of course	Freshman -1 st - year
11	Year of study and semester (s)	Summer 2020/2021
12	Final Qualification	
13	Other department (s) involved in teaching the course	-
14	Language of Instruction	Arabic + English
15	Teaching methodology	<input checked="" type="checkbox"/> Blended <input checked="" type="checkbox"/> Online
16	Electronic platform(s)	<input checked="" type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others.....
17	Date of production/revision	29/6/2020

18 Course Coordinator:

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20 Course Description:

Electric Field, Gauss's Law; Electric Potential; Capacitance and Dielectrics; Current and Resistance; Direct Current Circuits, Magnetic Field, Sources of the Magnetic Field.

21 Course aims and outcomes:

A- Aims:

- 1- Understanding the fundamental concepts in electricity and magnetism.
- 2- Utilizing physics concepts qualitatively as well as quantitatively.
- 3- To develop critical thinking and analytical problem-solving skills.
- 4- To gain an appreciation of how large a role electromagnetism plays in our daily life.

B- Intended Learning Outcomes (ILOs):

Upon successful completion of this course, students will be able to:

- 1) Define what is electric force, electric field, electric potential.
- 2) Calculate the capacitance for different capacitors.
- 3) Apply Ohm's law and Kirchhoff's rules for DC circuits.
- 4) Determine the magnetic force for point charges and current-carrying wires.
- 5) Apply Ampere's law and determine the magnetic flux.

22. Topic Outline and Schedule:

Chapter Number	Title	Sections	Suggested problems
21	Electric Charge and Electric Field <i>(4 Lectures, 1 hours each)</i>	21.3 Coulomb's Law 21.4 Electric Field and Electric Forces 21.5 Electric-Field Calculations 21.6 Electric Field Lines	9, 13, 16, 23, 29, 51, 48, 65
22	Gauss's Law <i>(3 Lectures, 1 hours each)</i>	22.1 Charge and Electric Flux 22.2 Calculating Electric Flux 22.3 Gauss's Law 22.4 Applications of Gauss's Law 22.5 Charges on Conductors	2, 5, 8, 11, 21, 17, 43
23	Electric Potential <i>(4 Lectures, 1 hours each)</i>	23.1 Electric Potential Energy 23.2 Electric Potential 23.3 Calculating Electric Potential 23.4 Equipotential Surfaces 23.5 Potential Gradient	7, 8, 26, 37, 43, 68
24	Capacitance and Dielectrics <i>(3 Lectures, 1 hours each)</i>	24.1 Capacitors and Capacitance 24.2 Capacitors in Series and Parallel 24.3 Energy Storage in Capacitors and Electric-Field Energy	1, 17, 20, 33

25	Current, Resistance, and Electromotive Force <i>(3 Lectures, 1 hours each)</i>	25.1 Current 25.2 Resistivity 25.3 Resistance 25.4 Electromotive Force and Circuits 25.5 Energy and Power in Electric Circuits	2, 7, 20, 38
26	Direct-Current Circuits <i>(3 Lectures, 1 hours each)</i>	26.1 Resistors in Series and Parallel 26.2 Kirchoff's Rules 26.3 Electrical Measuring Instruments (Self-Reading) 26.4 R-C Circuits	4, 18, 23, 28, 39, 49, 68
27	Magnetic Field and Magnetic Forces <i>(4 Lectures, 1 hours each)</i>	27.1 Magnetism 27.2 Magnetic Field 27.3 Magnetic Field Lines and Magnetic Flux 27.4 Motion of Charged Particles in a Magnetic Field 27.5 Applications of Motion of Charged Particles 27.6 Magnetic Force on a Current-Carrying Conductor 27.7 Force and Torque on a Current Loop	4, 5, 11, 27, 36, 45
28	Sources of Magnetic Field <i>(4 Lectures, 1 hours each)</i>	28.1 Magnetic Field of a Moving Charge 28.2 Magnetic Field of a Current Element 28.3 Magnetic Field of a Straight Current-Carrying Conductor 28.4 Force between Parallel Conductors 28.5 Magnetic Field of a Circular Current Loop 28.6 Ampere's Law 28.7 Applications of Ampere's Law	14, 23, 43, 46, 64

23 Evaluation Methods:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	Period (Week)	Platform
First Exam	15	Chapters 21 & 22	14/7/2020	LMSystem.ju.edu.jo
Second Exam	15	Chapters 23 & 24	25/7/2020	LMSystem.ju.edu.jo
Third Exam	15	Chapters 25 & 26	8/8/2020	LMSystem.ju.edu.jo
Assignment	5	-	-	-
Final Exam	50	-		-

24 Course Requirements (e.g: students should have a computer, internet connection, webcam, account on a specific software/platform...etc):

Students should have a computer, internet connection, webcam, account on Microsoft Teams

25 Course Policies:

A- Attendance policies:

no more than 15% of classes can be missed under any circumstances.

B- Absences from exams and submitting assignments on time:

No make ups for the short exams mentioned in item 23.

C- Health and safety procedures:

D- Honesty policy regarding cheating, plagiarism, misbehavior:

E- Grading policy:

F- Available university services that support achievement in the course:

26 References:

A- Required book(s), assigned reading and audio-visuals:

"University Physics with Modern Physics" F. Sears & M. Zemansky's, 14th edition, (Pearson, Pearson Education Limited, 2016).

B- Recommended books, materials and media:

1. Raymond A. Serway and John W. Jewett Jr., "Physics For Scientists and Engineers with Modern Physics", 9th edition, (Thomson Learning, Belmont, CA, USA, 2014).
2. David Halliday, Robert Resnick, and Jearl Walker, "EXTENDED PRINCIPLES OF PHYSICS", 9th Edition (John Wiley & Sons, Inc., 2011).
3. Bauer Westfall, "University Physics with Modern Physics", (McGraw Hill, 2011).
4. James S. Walker, "Physics" Fourth Edition, (Addison – Wesley, 2010).
5. Giancoli, "Physics for Scientists & Engineers with Modern Physics", Fourth Edition, (Pearson Education, 2009).
6. Ohanian and Market, "Physics for Engineers and Scientists", Extended Third Edition, (W. W. Norton & Company, 2007).

27 Additional information:

Name of Course Coordinator: **Moh'd Hussein** Signature: *Moh'd Hussein* Date: 29/6/2020

Head of Curriculum Committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of Curriculum Committee/Faculty: ----- Signature: -----

Dean: ----- Signature: -----