Course Specification

(Bachelor)

Course Title:	Physics 2
Course Code:	PHY 214
Program:	Basic Science
Department:	Information Systems
College:	Computer and information Sciences
Institution:	Majmaah University
Version:	2
Last Revision Date:	9 September 2023

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: (3(3,0,1))					
2. Course type					
A.	☐University	☒ College	☐Department	☐Track	☐Others
B.	☒ Required		☐Elective		
3. Level/year at which this course is offered: (Level 3					
4. Course general Description:					
This course is designed to equip the skills and knowledge of fundamental principles of Physics to apply in computer science. This course covers the laws governing Electricity and Magnetism					
5. Pre-requirements for this course (if any):					
Phy 123					
6. Pre-requirements for this course (if any)**:Nil**					
7. Course Main Objective(s):					
1. Gain knowledge of the basic concepts and principles of Physics, which is relevant to their further studies. **2. Student can understand the concepts and principles of Electricity and Magnetism through lectures and assessment tools** **3. Student can be able to analyze the physical problem and learn to express mathematical equations.** **4. Able to apply basic principles of Physics in solving problems in a structured process.**					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	60	100%
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	45
2.	**Laboratory/Studio**	
3.	**Field**	
4.	**Tutorial**	15
5.	**Others (specify)**	
Total		60

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	CLO1-Gain knowledge of the basic concepts and principles of Physics, which is relevant to their further studies.	K1	Classroom Teaching,	Quiz, Mid Exam, Class Test, Final Exam
1.2	CLO2- Student can understand the concepts and principles of Electricity and Magnetism through lectures and assessment tools	K1	Classroom Teaching,	Assignment, Mid Exam, Final Exam
...				
2.0	**Skills**			
2.1	CLO3- Student can be able to analyse the physical problem and learn to express mathematical equations.	S1	Classroom Teaching,	Assignment, Mid Exam, Final Exam

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
2.2	CLO4- Able to apply basic principles of Physics in solving problems in a structured process.	S5	Classroom Teaching,	Assignment, Quiz, Mid Exam, Final Exam
...				
3.0	**Values, autonomy, and responsibility**			
3.1				
3.2				
...				

C. Course Content

No	List of Topics	Contact Hours
1.	Overview of fundamental aspects of Physics and in particular static and current electricity	4
2.	Electric fields	4
3.	Coulomb's law, Gauss' Law	4
4.	Electric potential and electric fields	4
5.	Capacitance (series and parallel)	4
6.	Dielectric	4
7.	Ohm's law, currents, and resistance	4
8.	electrical energy and power	4
9.	Direct current circuits,	4
10.	Kirchhoff's rules	4
11.	Magnetic fields, motion of charged particle in a magnetic field	4
12.	Magnetic forces between two parallel wires	4
13.	Ampere's law, Biot – Savert's law,	4
14.	Electromagnetic induction, Faraday's law of induction, Lenz' rule, electric generators	4
15.	Revision	4

Total		**60**

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Homework	During the term	20%
2.	Midterm	During the term	20%
3.	Class Test	During the term	20%
4.	Final Exam	16th week	40%
5.	Total		100%
6.			

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	TextBook: 1.Physics: Principles with Applications, Global Edition, Douglas C. Giancoli, Pearson New International Edition, 2016. 2. Physics for Scientists and Engineers with Modern Physics by Jewett and Serway, 9thEdition, Thomson Brooks/Cole 2013.
Supportive References	a. Richard P. Feynman, Robert B. Leighton and Matthew Sands, the Feynman Lectures on Physics, 1st Edition (New Millennium Edition). b. Engineering Physics, Gaur and Gupta, Chand Publishers
Electronic Materials	a. www.engr.wisc.edu/ep/ b. engphys.mcmaster.ca c. www.engphys.ubc.ca/
Other Learning Materials	a. Computer-based experiments. b. Professional standards (Models) Robotic application

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom and lab are required as per the recommendation of university.
Technology equipment (projector, smart board, software)	**Enough facilities are present (Such as projector, Video conferencing machine)**
Other equipment (depending on the nature of the specialty)	**Enough laboratory equipment required.**

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Indirect
Effectiveness of Students assessment	Instructor	Direct
Quality of learning resources	Instructor	Direct
The extent to which CLOs have been achieved	Students	Indirect
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	