هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد NCAAA T4 2020

Course Specifications

Course Title:	Physics-2
Course Code:	PHY 214
Program:	Basic Science
Department:	Basic Science
College:	Computer and information Sciences
Institution:	Majmaah University

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A. Course Identification

1. Credit hours:	3(3,0,1)
2. Course type	
a.	University ☐ College ☒ Department ☐ Others ☐
b.	Required ☒ Elective ☐
3. Level/year at which this course is offered:	**Level 4**
4. Pre-requisites for this course (if any)**:**	**PHY 123**
5. Co-requisites for this course (if any)**:**	**Nil**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	44	100%
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	33
2	**Laboratory/Studio**	-
3	**Tutorial**	11
4	**Others** (specify)	-
	Total	44

B. Course Objectives and Learning Outcomes

1.**Course Description** : This course is main topics in electricity and magnetism introducing in the following topics: Introduction to Physics and electricity; Electric fields, Coulomb's law (statement, equation and problems), Gauss' Law (statement, equation and problems), electric potential, capacitance (series and parallel) and dielectric, currents and resistance (Ohm's law), electrical energy and power, direct current circuits, Kirchhoff's rules, magnetic fields, motion of charged particle in a magnetic field, sources of the magnetic field, Faraday's law of induction (statement, equation and problems), Ampere's law.

2. Course Main Objective

1. Gain knowledge of the basic concepts and principles of Physics, which relevant to their further studies.
2. Students can understand the concepts and principles of electricity, through lectures.
3. Students can understand the concepts and principles of magnetism, through lectures.
4. Students identify the relation between Electricity and magnetism
5. Analyses the physical problem and learn to express a mathematical equation.
6. Identify the solutions for physical problems related to the course.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	
1.1		
1.2		
1.3		
1.4		
1.5		
1.6		
1.7		
2	**Skills :**	
2.1	CLO1: Gain knowledge of the basic concepts and principles of Physics, which relevant to their further studies.	S5
2.2	CLO2: Students can understand the concepts and principles of electricity, through lectures.	S5
2.3	CLO3: Students can understand the concepts and principles of magnetism, through lectures.	S5
2.4	CLO4: Students identify the relation between electricity and magnetism	S5
2.5	CLO5: Students can Analyses the physical problem and learn to express a mathematical equation.	S5
2.6	CLO6: Students can identify the solutions for physical problems related to the course.	S5
3	**Values:**	
3.1		
3.2		
3.7		

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, Coulomb's law, Gauss' Law	8

3	Electric potential and electric fields	8
4	Capacitance (series and parallel) and dielectric	4
5	Ohm's law, currents and resistance, electrical energy and power	4
6	Direct current circuits, Kirchhoff's rules	4
7	Magnetic fields, motion of charged particle in a magnetic field	4
8	Magnetic forces between two parallel wires, Ampere's law, Biot – Savert's law,	4
9	Electromagnetic induction, Faraday's law of induction, Lenz' rule, electric generators	4
Total		44

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
1.1			
1.2			
1.3			
1.4			
1.5			
1.6			
2.0	**Skills**		
2.1	Gain knowledge of the basic concepts and principles of Physics, which relevant to their further studies.	Teaching large groups (lectures), Active learning, cooperative learning, discussions	Quiz, Mid Exam, Final Exam, Homework's
2.2	Students can understand the concepts and principles of electricity, through lectures.	Teaching large groups (lectures), Active learning, cooperative learning, discussions	Quiz, Mid Exam, Final Exam, Homework's
2.3	Students can understand the concepts and principles of magnetism, through lectures.	Teaching large groups (lectures), Active learning, cooperative learning, discussions	Class test, Final Exam, Homework's
2.4	Students identify the relation between Electricity and magnetism	Teaching large groups (lectures), Active learning, cooperative learning, discussions	Final Exam, Home works
2.5	Students can Analyses the physical problem and learn to express a mathematical equation.	Problem based learning. Work based learning.	Quiz, Mid Exam, Final Exam, class test, Home works
2.6	Students can identify the solutions for physical problems related to the course.	Problem based learning. Work based learning.	Quiz, Mid Exam, Final Exam, class test, Home works
3.0	**Values**		
3.1			
3.2			
3.3			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	class test	4	20%
2	midterm	7	20%
3	Home works		20%
4	final exam	as schedule	40%
5	Total		100

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

- **Student can access the concern staff during office hours; each student can take the consultation and advice.**
- **Students also contacts through social networking websites/Email for clarification of doubts and consultation.**
- **Available for 2-3 hours in day to the students**

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	**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.
Essential References Materials	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	*www.engr.wisc.edu/ep/* *engphys.mcmaster.ca* *www.engphys.ubc.ca/*
Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms prepared, AC, Lights Sources and Seats
Technology Resources (AV, data show, Smart Board, software, etc.)	Smart Board, Internet
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Final exam answer scripts Verification	Faculty members	Review- direct
Course feedback	Students	survey - indirect

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	CCIS MEETING
Reference No.	
Date	