Faculty: Faculty of Science	
Department: Service Courses Unit	**Program: Bachelor's**
Academic year:	**Semester:**

Course Plan

First: Course Information

Course No.: 0300122	***Course Title: General Physics 2***	***Credit Hours: 3***
Prerequisite: 0300121	***Section No.:***	***Lecture Time:***
Type Of Course:	■ ***Obligatory Faculty Requirement*** ☐ ***Elective University Requirement*** ☐ ***Obligatory University Requirement*** ☐ ***Faculty Requirement*** ☐ ***Course Elective Specialty Requirement*** ☐ ***Obligatory Specialization requirement*** ☐	
Type of Learning:	■ ***Face-to-Face Learning*** ☐ ***Blended Learning(2 Face-to-Face + 1Asynchronous)*** ☐ ***Online Learning (2 Synchronous+1 Asynchronous)***	

Second: Instructor's Information

Name:	***Academic Rank:***	
Email:	***Office No.:***	***Phone Number:***
Office Hours:		

Third: Course Description

Electric charge, Electric Force, Electric Field, Gauss law, Electric potential, Capacitance and dielectrics, Current and resistance, Ohm's law, Electromotive Force, DC Circuits, Kirchhoff's law, Magnetic field, Sources of Magnetic fields.

Fourth: Course Objectives

This course has several rather broad goals. They include that you:

1. To provide an appreciation of the nature of physics, its methods, and its goals.
2. To provide a foundation in physics necessary for further study in science, engineering and technology.
3. To engage in productive communication and collaboration with peers.
4. To contribute to the development of the student's thinking process through the understanding of the theory and application of this knowledge to the solution of practical problems.

Fifth: Learning Source

Main Reference:	**Physics for Scientists and Engineers with Modern Physics.**	
***Author:* : R. A. Serway and John W. Jewett**	***Issue No.:* 9th edition**	***Publication Year: 2014***
Additional Sources&Websites:	• *Fundamentals of Physics, David Halliday, Robert Resnick, and Jearal Walker.* • *University Physics, F.Sears, M. Zemansky, and H. Yaoung.* • *Principles of Physics, J.B Marion and W.F. Hornyak* • ***https://ocw.mit.edu/courses/physics/8-022-physics-ii-electricity-and-magnetism-fall-2006/lecture-notes/*** • ***https://web.mst.edu/~vojtat/class_2135/lectures/lecture01/lecture01.htm*** • ***https://physicscourses.colorado.edu/phys1120/phys1120_fa09/LectureNotes/lectureIndex.html***	
Teaching Type:	■ ***Classroom*** □ ***Laboratory*** □ ***Workshop*** □ ***MS Teams*** ■ ***Moodle***	

Sixth: Learning Outcomes

Level descriptor according to (JNQF)	**CILOs Code**	**CILOs**	**Associated PILOs Code** Choose one PILO for each CILO*	**Assessment method**** Choose at least two methods	**Scores out of 100** State the total score identified for each CILO
Knowledge	K1	**Basic knowledge:** Defining: Electric Field, Electric potential, Capacitance and dielectric materials, Magnetic field and its sources.	PK1	First, second and Final Exams	14
	K2	**Basic Factual Knowledge:** Defining Coulomb's law, gauss's law, Kirchhoff's rules, ohm's	PK2	First, second and Final Exams	16

		law, Biosavart law and Ampere's law.			
	K3	**Concepts and Theories:** Expressing gauss's law, Kirchhoff's rules, and ohm's law, Identifying law of Kirchhoff's rules, ohm's law and electric power to discipline, Express electric and magnetic field of different sources.	PK3	First, second and Final Exams	10
	K4	**Contemporary Trends, Problems and Research:** Exemplifying the series and parallel DC circuits, Choosing law of Kirchhoff's rules, ohm's law and electric power to discipline,	PK4	First, second and Final Exams	10
Skills	S1	**Problem solving skills:** Students solve problems on the board. I giving them group assignments and home works and encourage group projects, but I can say that technology has become an integral part of their lives, and use computer programs to draw and solve mathematical equations, derivation and integration and they feel confident in this area.	PS1	First, second and Final Exams	20
	S2	**Modeling and Design:** Construct circuits using ohm's law, Kirchhoff's rules for solving problems and design.	PS2	First, second and Final Exams	12
	S3	**Application of Methods and Tools:** Integrating the concepts and principles of the electric field and its applications, Interpret any phenomena according to physical laws	PS3	First, second and Final Exams	10
	S4	**Specific cognitions skill:** A range of cognitive and practical skills required to	PS4	First, second and Final Exams	8

		generate solutions to specific problems in one of the physical fields.			
Competencies	C1	**Analytic skills:** Relate the theoretical information to practical work to increase the understanding of the basic knowledge.	PC1	Assignment	2.5
	C2	**Strategic Thinking:** Formulate plans designed to achieve maximum useful of the special techniques that the student uses to solve the mechanical problems.	PC2	Assignment	2.5
	C3	**Creative thinking and innovation:** Devise easy methods to solve the mechanical Problems	PC3	Assignment	2.5
	C4	**Communication:** **1**. Students will be able to communicate with teacher, ask questions, solve problems, and use computers. **2**. Students ask questions during the lecture, work in groups, and communicate with each other and with me electronically, and periodically visit the sites I recommended.	PC4	Assignment	2.5

***Refer to document () and page 2 in document ()**
**** Refer to document ()**
****80% of the students must achieve the minimum acceptable percentage or higher for each CILO**

Seventh: Course Structure

Lecture Date	Intended Teaching Outcomes(ILOs)	Topics	Teaching Procedures*	Teaching Methods***	References***
	K1 S3C1 C4 C2	Introduction	Face-to-Face	Discussion	Text book
	K1 S3C1 C4 C2	23.1 Properties of Electric Charges 23.2 Charging Objects by Induction	Face-to-Face	Lecture demonstration and discussion	Text book
	K1 S3C1 C4 C2	23.3 Coulomb's Law 23.4 Analysis Model: Particle in a Field (Electric)	Face-to-Face	Lecture demonstration and discussion	Text book
	K1 S3C1 C4 C2	23.5 Electric Field of a Continuous Charge Distribution	Face-to-Face	Lecture demonstration and discussion	Text book
	K1 S3C1 C4 C2	23.5 Electric Field of a Continuous Charge Distribution	Face-to-Face	Lecture demonstration and discussion	Text book
	K1 S3C1 C4 C2	23.6 Electric Field Lines 23.7 Motion of a Charged Particle in a Uniform Electric Field	Face-to-Face	Lecture demonstration and discussion	Text book
	K1 S3C1 C4 C2	Solving Problem of Electric field	Face-to-Face	Homework 1 (2 marks): pages: 716-724 text problems: (3,11, 25, 29, 33,37, 38, 39, 44, 49, 52)	Text book
	K1 K2S1S3 S4 C2 C4	24.1 Electric Flux	Face-to-Face	Lecture demonstration and discussion	Text book
	K1 K2S1S3 S4 C2 C4	24.2 Gauss's Law	Face-to-Face	Lecture demonstration	Text book
	K1 K2S1S3 S4 C2 C4	24.3 Application of Gauss's Law to Various Charge	Face-to-Face	Lecture demonstration and discussion	Text book

		Distributions			
	K1 K2S1S3 S4 C2 C4	24.4 Conductors in Electrostatic Equilibrium	Face-to-Face	Lecture demonstration and discussion	Text book
	K1 K2S1S3 S4 C2 C4	Solving Problem Of Gauss Law	Face-to-Face	Homework 2 (2 marks): Pages 740-745 text problems: (2,6, 9, 13, 19, 24, 27, 29, 30, 44, 50)	Text book
	K1S3 S4 C1 C4	25.1 Electric Potential and Potential Difference	Face-to-Face	Lecture demonstration and discussion	Text book
	K1S3 S4 C1 C4	25.2 Potential Difference in a Uniform Electric Field	Face-to-Face	Lecture demonstration and discussion	Text book
	K1S3 S4 C1 C4	25.3 Electric Potential and Potential Energy Due to Point Charges	Face-to-Face	Lecture demonstration and discussion	Text book
	K1S3 S4 C1 C4	25.4 Obtaining the Value of the Electric Field from the Electric Potential	Face-to-Face	Lecture demonstration and discussion	Text book
	K1S3 S4 C1 C4	25.5 Electric Potential Due to Continuous Charge Distributions	Face-to-Face	Lecture demonstration and discussion	Text book
	K1S3 S4 C1 C4	25.6 Electric Potential Due to a Charged Conductor	Face-to-Face	Lecture demonstration and discussion	Text book
	K1S3 S4 C1 C4	Solving problems of the Chapter (Electric potential)	Face-to-Face	Homework 3 (2 marks): Pages: 769-776 text problems: (2, 13, 27, 39, 44,50)	Text book
	K3 K2 S3 S4 C3C2C1	26.1 Definition of Capacitance 26.2 Calculating Capacitance	Face-to-Face	Lecture demonstration and discussion	Text book

	K3 K2 S3 S4 C3C2C1	26.3Combinations of Capacitors 26.4 Energy Stored in a Charged Capacitor	Face-to-Face	Lecture demonstration and discussion	Text book
	K3 K2 S3 S4 C3C2C1	26.5 Capacitors with Dielectrics	Face-to-Face	Lecture demonstration and discussion	Text book
	K3 K2 S3 S4 C3C2C1	26.7 An Atomic Description of Dielectrics 27.1 Electric Current	Face-to-Face	Homework 4 (2 marks): Pages: 801-807 text problems: (4, 5, 7, 21, 23, 37, 44)	Text book
	K1S3 S4 C1 C4 S2	27.2 Resistance 27.3 A Model for Electrical Conduction	Face-to-Face	Lecture demonstration and discussion	Text book
	K1S3 S4 C1 C4 S2	27.4 Resistance and Temperature	Face-to-Face	Lecture demonstration and discussion	Text book
	K1S3 S4 C1 C4 S2	27.6 Electrical Power Solving problems of Current and resistance	Face-to-Face	Homework 5 (2 marks): pages: 826-831 text problems: (3, 9, 15, 26, 29, 41)	Text book
	K2 K3 K4 S1 S2 S3 C3	28.1 Electromotive Force 28.2 Resistors in Series and Parallel	Face-to-Face	Lecture demonstration and discussion	Text book
	K2 K3 K4 S1 S2 S3 C3	28.3 Kirchhoff's Rules	Face-to-Face	Lecture demonstration and discussion	Text book
	K2 K3 K4 S1 S2 S3 C3	28.4 RC Circuits	Face-to-Face	Lecture demonstration and discussion	Text book
	K2 K3 K4 S1 S2 S3 C3	28.5 Household Wiring and Electrical Safety Solving problems of Chapter Direct current and resistances	Face-to-Face	Homework 6 (2 marks): pages: 855-867 text problems: (1, 5, 7, 9, 13, 15, 24, 37)	Text book
	K3 K4 S3 S4 C3C2C1	29.1 Analysis Model: Particle in a Field (Magnetic)	Face-to-Face	Lecture demonstration and discussion	Text book

	K3 K4 S3 S4 C3C2C1	29.2 Motion of a Charged Particle in a Uniform Magnetic Field	Face-to-Face	Lecture demonstration and discussion	Text book
	K3 K4 S3 S4 C3C2C1	29.3 Applications Involving Charged Particles Moving in a Magnetic Field	Face-to-Face	Lecture demonstration and discussion	Text book
	K3 K4 S3 S4 C3C2C1	29.4 Magnetic Force Acting on a Current-Carrying Conductor	Face-to-Face	Homework 7 (2 marks): pages: 895-903 text problems: (2, 3, 8, 11)	Text book
	K1S3 S4 C1 C4 S2	30.1 The Biot–Savart Law	Face-to-Face	Lecture demonstration and discussion	Text book
	K1S3 S4 C1 C4 S2	30.2 The Magnetic Force Between Two Parallel Conductors	Face-to-Face	Lecture demonstration and discussion	Text book
	K1S3 S4 C1 C4 S2	30.3 Ampère's Law 30.4 The Magnetic Field of a Solenoid	Face-to-Face	Lecture demonstration and discussion	Text book
	K1S3 S4 C1 C4 S2	30.5 Gauss's Law in Magnetism	Face-to-Face	Lecture demonstration and discussion	Text book
	K1S3 S4 C1 C4 S2	30.6 Magnetism in Matter Solving problems of Sources of the Magnetic Field	Face-to-Face	Homework 8 (2 marks): pages: 925-934 text problems: (2, 3, 7, 19, 41)	Text book

* Learning procedures: (Face-to-Face, synchronous, a synchronous). * * Teaching methods: (Lecture, video…..). ** * Reference: (Pages of the book, recorded lecture, video….).

Eighth: Assessment methods

Methods	Online Learning	Blended Learning	Face-To-Face Learning	Measurable Course (ILOs)
First Exam	0	0	20	
Second Exam	0	0	20	
Mid-term Exam	0	0	0	
Assignment	0	0	10	
Asynchronous Activities	0	0	0	
Final Exam	0	0	50	

Methods	**Direct Teaching**	**Specific Course Output to be measured** *State the score identified for each CILO for each method of assessment out of 100 **If any CILO will not be assessed in the course, mark NA.											
		K1	**K2**	**K3**	**K4**	**S1**	**S2**	**S3**	**S4**	**C1**	**C2**	**C3**	**C4**
First Exam	**20**	**4**	**3**	**2**	**2**	**5**	**2**	**2**	**2**				
Second Exam	**20**	**4**	**3**	**2**	**2**	**5**	**2**	**2**	**2**				
Final Exam	**50**	**6**	**10**	**6**	**6**	**10**	**8**	**6**	**4**				
Assignment	**10**									**2.5**	**2.5**	**2.5**	**2.5**
Total	**100**	**14**	**16**	**10**	**10**	**20**	**12**	**10**	**8**	**2.5**	**2.5**	**2.5**	**2.5**

Ninth: Course Policies

- All course policies are applied on all teaching patterns (online, blended, and face-to-face Learning) as follows:
  a. Punctuality.
  b. Participation and interaction.
  c. Attendance and exams.
- Academic integrity: (cheating and plagiarism are prohibited).

Approved by:	Name	Date	Signature
Head of Department			
Faculty Dean			