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

Course Plan

First: Course Information

Course No.0300121	***Course Title: General Physics 1***	***Credit Hours:* 3**
Prerequisite:	***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:***	
Office Number:	***Phone Number:***	***Email :***
Office Hours:		

Third: Course Description

Physics and Measurement; Motion in One Dimension; Motion in Two Dimensions, motion Newton's Laws and friction; Circular Motion and Other Applications of Newton's Laws, Work, Energy and power of a System, potential energy and conservation of energy, Momentum and Collisions; Rotational Motion (Angular Position Velocity, and Acceleration), Torque, Moments of Inertia, Rotational kinetic energy.

Fourth:Course Objectives

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

1. To provide a foundation in physics necessary for further study in science, engineering and technology.
2. To provide an appreciation of the nature of physics, its methods, and its goals.
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 and Websites:	1. *Fundamentals of Physics, David Halliday, Robert Resnick, and Jearal Walker.* 2. *University Physics, F.Sears, M. Zemansky, and H. Yaoung.* 3. *Principles of Physics, J.B Marion and W.F. Hornyak*	
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** Define SI system of units, displacement, velocity, acceleration, force, rotation motion, energy, momentum, Moments of Inertia and Rotational kinetic energy	PK1	Midterm and Final Exams	14
	K2	**Basic Factual Knowledge** Physics students should describe a strong foundation in classical mechanics, which includes topics such as Newton's laws of motion, energy, momentum, and rotational motion.	PK2	Midterm and Final Exams	16

	K3	**Concepts and Theories:** Concepts of measurements of physics quantities, kinetic equations, concepts of motion in one and two dimensions, Newton's Laws of motion and theory of energy conservation.	PK3	Midterm and Final Exams	6
	K4	**Contemporary Trends, Problems and Research:** Recognize the methodology of solving problems by using Newton's Laws and kinetic equations	PK4	Midterm and Final Exams	6
Skills	S1	**Problem solving skills:** Students solve problems on the board. I giving them group assignments and homework 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	Midterm and Final Exams	4
	S2	**Modeling and Design:** Applying Newton's Laws and energy theories model and design.	PS2	Midterm and Final Exams	12
	S3	**Application of Methods and Tools:** Integrate the concepts and Principles of mechanics (Newton' laws and energy theory) for applications.	PS3	Midterm and Final Exams	8
	S4	**Specific cognitions skill:** A range of cognitive and practical skills required to generate solutions to specific problems in one of the physical fields.	PS4	Midterm and Final Exams	4
Competencies	C1	**Analytic skills:** Relate the theoretical information to practical work to increase the understanding of the basic knowledge.	PC1	Assignment	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	5
	C3	**Creative thinking and innovation:** Devise easy methods to solve the mechanical Problems.	PC3	Assignment	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	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 Outcome (ILOs)	Topics	Teaching Procedure*	Teaching Methods***	References***
	K1,K2	**Chapter (1)** Introduction, Revision, Standards of length, mass, time	Face-to-Face	Lecture demonstration and discussion	Text book
	K1,K2	Dimensional analysis	Face-to-Face	Recorded lecture, video	Text book
	C1,C2	Conversion of units, Problem solving	Asynchronous	Recorded lecture, video	Text book, Homework1, pages:15-17 (4,9, 12, 15,36,38)
	K2,S1, K4, S3	**Chapter (2)** Displacement,	Face-to-Face	Lecture	Text book

		velocity and speed, instantaneous velocity and speed		demonstration and discussion	
	K2,S1, K4, S3	Acceleration	Face-to-Face	Lecture demonstration and discussion	Text book
	K2,S1, K4, S3,C1,C2	one dimensional motion with constant acceleration	Asynchronous	Recorded lecture, video, Quiz	Text book, Homework2, pages: 51-55, (1,2,3, 7, 15,21, 29,31)
	K2,S1, K4, S3,C1,C2	Freely falling objects. Problem solving	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1,K4, S4, S1	**Chapter (3)** Coordinate systems	Face-to-Face	Lecture demonstration and discussion	Text book
	C2,C3	vector and scalar quantities	Asynchronous	Recorded lecture, video	Text book, Homework3, pages: 72-74 (1,3,8,14,23,26,31,32,36,38)
	K3,C2,C3, K1,K4, S4, S1	some properties of vectors**,**	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1,K4, S4, S1	**Chapter (4)** The displacement, velocity and acceleration vectors	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1,K4, S4, S1	Two dimensional motion with constant acceleration	Asynchronous	Recorded lecture, video, Quiz	Text book, Homework4, pages: 102-105 (1, 3,6, 9, 15, 18, 21, 25, 29, 40)
	K3,C2,C3, K1,K4, S4, S1	projectile motion**,** particle in uniform circular motion**,** Problem solving	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, K3, S2, S3, S4, S1, C4	**Chapter (5)** The concept of force	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, S2, S3, S4, S1, C4	Newton's First law	Asynchronous	Recorded lecture, video, Quiz	Text book
	K3,C2,C3, K1, K4, S2, S3, S4, S1,	Newton's Second law	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, S2, S3, S4,	The force of gravity and weight	Face-to-Face	Lecture demonstration and discussion	Text book

	S1, C5				
	K3,C2,C3, K1, K4, S2, S3, S4, S1	Newton's Third law, some applications of Newton's law, forces of friction	Asynchronous	Recorded lecture, video	Text book
	K3,C2,C3, K1, K4, S2, S3, S4, S1	some applications of Newton's law	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, S2, S3, S4, S1	forces of friction	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, , S2, S3, S4, S1,	forces of friction	Asynchronous	Recorded lecture, video, Quiz	Text book, Homework5, pages:139-147 (3, 5, 11, 19, 28, 29, 33, 36, 37, 40, 42, 43, 45, 49, 64, 65, 66, 70, 85)
	K3,C2,C3, K1, K4, S4, S1	**Chapter (6)** Newton's second law applied to uniform circular motion	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, S4, S1,	Newton's second law applied to uniform circular motion	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, , S4, S1	Non-uniform circular motion	Asynchronous	Recorded lecture, video	Text book Homework 6, pages: 169-170 (1,6, 8, 12, 15, 16, 18)
	K3,C2,C3, K1, K4, , S4, S1,	Problem solving	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, K2, S4, S1, C2	**Chapter (7)** Work done by constant force	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, K2, S4, S1, C1	work done by varying force	Asynchronous	Recorded lecture, video, Quiz	Text book
	K3,C2,C3, K1, K4, K3, S4, S1, C4	kinetic energy and the work energy theorem	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, K2, S4, S1, C1	Potential energy of a system	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, K5, S4, S1,	conservative and neoconservative forces	Asynchronous	Recorded lecture, video	Text book Homework 7, pages: 205-209 (5, 8, 9, 11, 12, 15, 17, 29, 31, 32, 33, 42,45,49,50,63)

	K3,C2,C3, K1, K4, K3, S4, S1, C1	**Chapter (8)** conservation of mechanical energy	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, K2, S4, S1, C4	conservation of mechanical energy	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, S4, S1	isolated and non-isolated systems	Asynchronous	Recorded lecture, video, Quiz	Text book Homework 8, pages: 237-239 (6, 7, 15, 22, 23, 29)
	K3,C2,C3, K1, K4, S4, S1,	work done by neoconservative forces	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, S4, S1,	Power	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, S4, S1	**Chapter (9)** 9.1 Linear Momentum 9.2 Analysis Model: Isolated System (Momentum)	Asynchronous	Recorded lecture, video	Text book
	K3,C2,C3, K1, K4, S4, S1,	9.4 Collisions in One Dimension 9.5 Collisions in Two Dimensions	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, S4, S1,	9.6 The Center of Mass	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, S4, S1	**Chapter (10)** **10.1** Angular Position, Velocity, and Acceleration	Asynchronous	Recorded lecture, video, Quiz	Text book Homework 9, pages: 283-287 (4, 15, 17, 23, 29, 31,33, 34,37, 50)
	K3,C2,C3, K1, K4, S4, S1,	**10.4** Torque	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, S4, S1,	**10.6** Calculation of Moments of Inertia	Face-to-Face	Lecture demonstration and discussion	Text book
	K3,C2,C3, K1, K4, S4, S1	**10.7** Rotational Kinetic Energy	Asynchronous	Recorded lecture, video	Text book Homework 10, pages: 324-334 (1, 27, 40, 44, 45)

* Learning procedures: (Face-to-Face, synchronous, asynchronous). * * 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	0	
Second Exam	0	0	0	
Mid-term Exam	0	30	0	
Participation	0	0	0	
Asynchronous Activities	0	20	0	
Final Exam	0	50	0	

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**
Midterm Exam	**30**	**8**	**6**	**2**	**2**	**4**	**4**	**2**	**2**				
Final Exam	**50**	**6**	**10**	**4**	**4**	**10**	**8**	**6**	**2**				
Assignment	**20**									**5**	**5**	**5**	**5**
Total	**100**	**14**	**16**	**6**	**6**	**14**	**12**	**8**	**4**	**5**	**5**	**5**	**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			