The Hashemite University

الجامعـــــة الهاشميـــــة

Deanship of Academic Development and International Outreach

عمادة التطوير الأكاديمي والتواصل الدولي

General Physics (110102107)

First Semester 2021– 2022

COURSE INFORMATION	
Course Name: General Physics Semester: First Department: Department of Physic Faculty: Facuilty of science	Course Code: 110102107 Section: 1 Core Curriculum:
Day(s) and Time(s): Sun, Tue, Thu 11:00-12:00 Classroom: 102 م ش	Credit Hours: 3 Prerequisites: None

COURSE DESCRIPTION

This course introduces the students to the basics of mechanics, which include kinematics and dynamics of motion of particles, circular motion, work and energy. In addition, it elucidates the principles of electricity such as electric force, electric field, electric potential, current and resistance and capacitors. Furthermore, the course covers the basics of magnetism like magnetic force and magnetic field as well as the basics of thermal properties of matter such as coefficient of linear expansion, specific heat and heat capacity, heat transfer, diffusion and first law of thermodynamics. Finally, the course explains the elements of fluid mechanics which include: density, pressure, gas laws, Archimedes principle, continuity equation, Bernoulli equation, viscosity, description of wave motion, velocity of waves, properties of (α, β, γ) rays, x–rays, radioactive decay and half–life period.

DELIVERY METHODS

The course will be delivered through a combination of active learning strategies. These will include:

- On board lectures and active classroom based discussion
- Collaborative learning through class team on Microsoft teams.
- Relevant videos through Microsoft team of the class
- Video lectures
- E-learning resources: e-reading assignments and practice quizzes through Microsoft Team

FACULTY INFORMATION	
Name	**Dr. Safeia Hamasha**
Academic Title:	**Dr.**
Office Location:	**Physics 103**
Telephone Number:	**053903333 ext. 4847**
Email Address:	**safeia@hu.edu.jo**
Office Hours:	**Sunday, Tuesday, Thursday,** 11-12 **Monday** 10-11 *Please send an e-mail (safeia@hu.edu.jo) to meet at any other time.*

REFERENCES AND LEARNING RESOURCES

Required Textbook: Physics

By: Joseph W. Kane and Morton M. Sternheim,

John Wiley and Sons, 3th edition, 1988.

References: Physics for Scientists and Engineers with Modern Physics

By: Raymond A. Serway and John W. Jewett

6th, Thomson. Brooks/Cole, 2004.

Core Curriculum Learning Outcomes	Program Learning Outcomes	Course Objectives	Course Student Learning Outcomes	Assessment Method
CC-LO-5 Think critically and creatively in a variety of methods in order to make decisions and solve problems.	PHYS-LO-1: Apply critical thinking and demonstrate problem-solving skills in two or more of the major fields of physics.	1. Develop an understanding of the basic principles of the major branches of physics.	1. Develop a clear understanding of basic physical phenomena in mechanics as an integral part of the student's overall education	● Exams ● Quizzes ● "On-line' reading assignments ● homework assignments
		2. Obtain a thorough foundation in the various fields of physics.	2. Explain natural phenomena using simple physics concepts.	● Exams ● Quizzes ● "On-line' reading assignments
		3. Learn to solve	3. Use algebra, trigonometry,	● Exams ● Quizzes

		physics problems using basic mathematics.	and basic calculus, in solving problems in mechanics.	● "On-line' reading assignments ● homework assignments
		4. Develop an understanding of models and theories of physics	4.1 Describe the motion of an object in one, two, and three dimensions. 4.2 Provide detailed and accurate description of the lows of motion 4.3 Provide detailed and accurate description of energy of a system and principle of conservation of energy 4.4 Provide detailed and accurate description of linear momentum and collisions	● Exams ● Quizzes ● "On-line' reading assignments ● homework assignments
.CC-LO-4. Communicate competently with others using oral and written English skills CC-LO-6. Demonstrate competency in the use of research skills and various information sources. CC-LO-7.	PHYS-LO-4: Use modern literature search methods to obtain information about physics topics and write reports.	5. Obtain an understanding of the role of physics in other disciplines, and its importance in society.	5. Acquire the ability to learn independently; articulate the importance of independent learning for future professional development	● "On-line" reading assignments ● Term project
	PHYS-LO-6: Communicate results to physicists and non- physicists.	6. Acquire positive attitudes towards further studies in physics and towards the application of physics in other disciplines.	6. Develop a positive attitude towards physics and its applications in society, and towards further study and lifelong learning.	● Term project

Identify the general concepts of humanities and natural sciences in a manner that reveals their value in life.				

ACADEMIC SUPPORT

It is The Hashemite University policy to provide educational opportunities that ensure fair, appropriate and reasonable accommodation to students who have disabilities that may affect their ability to participate in course activities or meet course requirements. Students with disabilities are encouraged to contact their Instructor to ensure that their individual needs are met. The University through its Special Need section will exert all efforts to accommodate for individual's needs.

COURSE REGULATIONS

Participation

Class participation and attendance are important elements of every student's learning experience at The Hashemite University, and the student is expected to attend all classes. A student should not miss more than 15% of the classes during a semester. *Those exceeding this limit of 15% will receive a failing grade regardless of their performance*. It is a student's responsibility to monitor the frequency of their own absences. **Attendance record begins on the first day of class irrespective of the period allotted to drop/add and late registration. It is a student's responsibility to sign-in; failure to do so will result in a non-attendance being recorded.**

In exceptional cases, the student, with the instructor's prior permission, could be exempted from attending a class provided that the number of such occasions does not exceed the limit allowed by the University. The instructor will determine the acceptability of an absence for being absent. A student who misses more than 25% of classes and has a valid excuse for being absent will be allowed to withdraw from the course.

Late or Missed Assignments

In all cases of assessment, students who fails to attend an exam without prior permission, and/or are unable to provide a medical note, will automatically receive a fail grade for this part of the assessment.

Student Complaints Policy

Students at The Hashemite University have the right to pursue complaints related to faculty, staff, and other students. The nature of the complaints may be either academic or non-

academic. For more information about the policy and processes related to this policy, you may refer to the students' handbook.

COURSE ASSESSMENT

Course Calendar and Assessment

Students will be graded through the following means of assessment and their final grade will be calculated from the forms of assessment as listed below with their grade weighting taken into account. The criteria for grading are listed at the end of the syllabus

Assessment	Grade Weighting	Deadline Assessment
Exam 1	25%	To be announced
Exam 2	25%	To be announced
participation	10%	
e.g	40%	To be announced

Description of Exams

Test questions will predominately come from material presented in the lectures. Semester exams will be conducted during the regularly scheduled lecture period. Exam will consist of a combination of multiple choice, short answer, match, true and false and/or descriptive questions.

No make-up exams, homework or quizzes will be given. Only documented absences will be considered as per HU guidelines.

Grades are not negotiable and are awarded according to the following criteria*:

Letter Grade	Description	Grade Points
A+	Excellent	4.00
A		3.75
A-		3.50
B+	Very Good	3.25
B		3.00
B-		2.75
C+	Good	2.50
C		2.25
C-		2.00
D+	Pass	1.75
D	Pass	1.50
F	Fail	0.00
I	Incomplete	-

WEEKLY LECTURE SCHEDULE AND CONTENT DISTRIBUTION

"Lecture hours and weeks are approximate and may change as needed"

Note: For phy 107 sections with 3 lecture periods per week (Sun,Tue,Thu), one lecture period (80 minutes). The course content specifies the sections in chapters 1-10 of the textbook that will be included in quizzes, homework and exams.

	Week 1	**lecture hours**
Chapter 1 Motion in a Straight Line	**Week #1**	**3**
Chapter 2 Motion in a Straight Line	Week#2	3
Chapter 3 Motion in Two Dimensions	Week#3	3
Chapter 4 Newton's law of motion, Circular motion	Week#4,5	6
Chapter 5 Work, energy, and power	Week# 6,7	6
Chapter 6 Thermal properties of matters	Week #8	4
Chapter 7 The mechanics of non-viscous fluids	Week# 9,10	5
Chapter 8 Electric forces, fields, and potentials, Direct currents, Magnetism	Week# 11,12	6
Chapter 9 The description of wave motion	Week # 13	3
Chapter 10 Nuclear physics	Week#14	3