



# Course Specification

## (Bachelor)

Course Title: **General Physics 1**

Course Code: **PHYS 101**

Program: **Physics**

Department: **Physics**

College: **Science**

Institution: **Majmaah University**

Version: **2024**

Last Revision Date: **Dec/2024**



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## A. General information about the course:

### 1. Course Identification

1. Credit hours: (3(2+1) )

#### 2. Course type

A.  University  College  Department  Track  Others  
 B.  Required  Elective

3. Level/year at which this course is offered: ( 1<sup>st</sup> level/1<sup>st</sup> year)

#### 4. Course General Description:

**An introductory course in classical physics covering fundamental concepts of mechanics. The course includes the study of motion, forces, energy, momentum, and rotational motion, with emphasis on practical applications and analytical skills.**

5. Pre-requirements for this course (if any):

None

6. Co-requisites for this course (if any):

None

#### 7. Course Main Objective(s):

1. Understanding fundamental concepts of classical mechanics and their applications
2. Developing quantitative and qualitative analysis abilities for physical phenomena
3. Acquiring scientific experimentation and data analysis skills
4. Using mathematical tools to model physical phenomena

### 2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	45	100 %
2	E-learning		
3	Hybrid <ul style="list-style-type: none"> <li>• Traditional classroom</li> </ul>		



No	Mode of Instruction	Contact Hours	Percentage
	• E-learning		
4	Distance learning		

### 3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	30
2.	Laboratory/Studio	15
3.	Field	
4.	Tutorial	
5.	Others (specify)	
<b>Total</b>		<b>45</b>

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

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
<b>1.0</b>	<b>Knowledge and understanding</b>			
1.1	Explanation of the basic concepts in classical mechanics and their relationships	K1, K2	Lecture, Lab	Exam, Homework Quizzes
1.2	Description of basic physics laws governing movement and forces	K1, K2	Lecture, Lab	Exam, Homework Quizzes
1.3	Definition of energy concepts, mobility and conservation laws	K1, K2	Lecture, Lab	Exam, Homework Quizzes
<b>2.0</b>	<b>Skills</b>			
2.1	Analysis of physical issues and	S1, S3	Lecture, Lab	Exam, Homework



Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
	development of strategies for solving them			Quizzes
2.2	Application of physical principles in the resolution of quantitative issues	S1	Lecture, Lab	Exam, Homework Quizzes
2.3	Linking physical theories to natural phenomena	S1	Lecture, Lab	Exam, Homework Quizzes
<b>3.0</b>	<b>Values, autonomy, and responsibility</b>			
3.1	Ability to continuous exploration of best practices and policies as well as their application at the highest level of quality.	V1, V2	group discussion	Presentation
3.2	Preservation of the integrity of experimental results within critical spirit	V1, V2	Lecture, group discussion	Presentation
...				

### C. Course Content

No	List of Topics	Contact Hours
1.	Fundamentals of Measurement and Vectors	6
2.	Motion in One and Two Dimensions	9
3.	Forces and Motions	9
4.	Energy and Work	9
5.	Momentum and collisions	6
6.	Rotational Motion and Equilibrium	6
<b>Total</b>		<b>45</b>





## D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Midterm exam 1	6 <sup>th</sup>	15 %
2.	Homework/Presentation	--	15 %
3.	Midterm exam 2	11 <sup>th</sup>	15 %
4.	Quizzes	4 <sup>th</sup> , 8 <sup>th</sup> , 12 <sup>th</sup>	15 %
5.	Final exam	16 <sup>th</sup>	40 %

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

## E. Learning Resources and Facilities

### 1. References and Learning Resources

<b>Essential References</b>	<ul style="list-style-type: none"> <li>Physics for Scientists and Engineers, Raymond A. Serway and John W. Jewett, 10th Edition, Cengage Learning (2023)</li> <li>University Physics with Modern Physics, Young &amp; Freedman, 16th Edition, Pearson (2024)</li> <li>Fundamentals of Physics, Halliday, Resnick, and Walker, 12th Edition, Wiley (2023)</li> <li>Physics for Scientists and Engineers: A Strategic Approach, Randall D. Knight, 5th Edition, Pearson (2024)</li> </ul>
<b>Supportive References</b>	<ul style="list-style-type: none"> <li>College Physics: A Strategic Approach, Knight, Jones &amp; Field, 5th Edition, Pearson (2024)</li> <li>Essential University Physics, Richard Wolfson, 4th Edition, Pearson (2023)</li> <li>Physics, Cutnell and Johnson, 12th Edition, Wiley (2024)</li> </ul>
<b>Electronic Materials</b>	<ul style="list-style-type: none"> <li>MIT OpenCourseWare - Classical Mechanics</li> <li>Khan Academy - Physics Library</li> <li>PhET Interactive Simulations - University of Colorado Boulder</li> </ul>
<b>Other Learning Materials</b>	Excel software for drawing graphs. MS Office for writing reports and presentations.

### 2. Required Facilities and equipment

Items	Resources
<b>facilities</b> (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Lecture room with at least 25 seats. Auditorium of a capacity of not less than 100 seats for large lecture format classes.





Items	Resources
<b>Technology equipment</b> (projector, smart board, software)	A smart board to write on and computer.
<b>Other equipment</b> (depending on the nature of the specialty)	Library, Seminar Room, and Wi-Fi internet connections.

## F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Internal Reviewer Committee	Direct
Effectiveness of Students assessment	Students	indirect
Quality of learning resources	Qiyas center, Stockholder and others	Direct
The extent to which CLOs have been achieved	Peer Reviewer	Direct
Other		

**Assessors** (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify))

**Assessment Methods** (Direct, Indirect)

## G. Specification Approval

<b>COUNCIL /COMMITTEE</b>	<b>PHYSICS DEPARTMENT COUNCIL</b>
<b>REFERENCE NO.</b>	
<b>DATE</b>	

