



Course Specification

— (Bachelor)

Course Title: General Physics (2)
Course Code: 2032102-4
Program: BSc. Of Physics
Department: Physics
College: Science
Institution: Taif University
Version: 1
Last Revision Date: <i>Pick Revision Date.</i>



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A. General information about the course:

1. Course Identification

1. Credit hours: (4 hours)

2. Course type

A. University College Department Track Others
B. Required Elective

3. Level/year at which this course is offered: (4th level / 2nd year)

4. Course general Description:

5. Pre-requirements for this course (if any): None

6. Co-requisites for this course (if any): None

7. Course Main Objective(s):

- The concepts of classical mechanics related to projectile and circular motions and to elastic and inelastic collisions. Learn and apply the fluid statics, including the definition of fluid pressure, the description of Pascal and Archimedes principles and associated hydrostatic applications and pressure measurement designs.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	7	100%
2	E-learning		
3	Hybrid <ul style="list-style-type: none"> • Traditional classroom 		





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	50
2.	Laboratory/Studio	20
3.	Field	
4.	Tutorial	
5.	Others (specify)	
Total		70

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

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Describe motions of straight trajectory on inclined planes and those of curved trajectories such as parabolic (projectile) and circular.	K3	<ul style="list-style-type: none"> Lectures Discussion 	Class performance (Interacting discussion with answers to oral questions).
1.2	Recognize momentum and energy conservation laws to describe elastic and inelastic collisions, and Measure physical quantities and properties with different instruments.	K3	<ul style="list-style-type: none"> Lectures Discussion 	Evaluation of homework, quizzes and reading reports.
...				
2.0				





Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
2.1	Explain physical phenomena and concepts relevant to the course and their applications	S1	<ul style="list-style-type: none"> Lecture 	<ul style="list-style-type: none"> Written Exam.
2.2	Develop physics problems solving skills.	S2	<ul style="list-style-type: none"> Small group work discussions 	<ul style="list-style-type: none"> Midterm and final exams
3.0 Values, autonomy, and responsibility				
3.1	Work efficiently within a teamwork frame to perform class and laboratory activities.	V2	<ul style="list-style-type: none"> Groups discussions 	<ul style="list-style-type: none"> Lab reports Projects
3.2	Act responsibly and be able to prepare a written scientific report.	V3	<ul style="list-style-type: none"> Lab work Groups discussions 	<ul style="list-style-type: none"> Lab reports
...				

C. Course Content

No	List of Topics	Contact Hours
Part 1		
1.	Circular trajectory motion: Angular displacement, velocity and acceleration – Equations of angular motion – centrifugal acceleration	4
2.	Parabolic trajectory motion: Projectile	3
3.	Newton's laws applications and motion on tilted planes	3
4.	The elastic property of a solid: Hook's law – Elasticity modulus	3
5.	The amount of motion and Elastic and inelastic collisions	3
6.	Three states of matter phase change diagram (solid and fluid- gas and liquid) - Pressure in fluids – Pascal principle – Archimedes principle	4
7.	Compressible fluid and non-Compressible fluid- perfect fluid and specifications	3
8.	Viscosity - effect of temperature on Viscosity	3
9.	Surface tension - the poetic property	3
10.	Flow of fluids- fluid movement –flow rate – continuity equation	4
11.	Poiseuille law –motion and kinetic energy- pressure energy - Bernoulli equation and applications	6
12.	Heat energy – Specific heat and heat capacity – Dissipated heat at constant	4





	temperature (liquid evaporation solid melting) -applications	
13.	Vibrations and Waves: Simple harmonic motion and pendulum – Wave propagation – Waves along strings – Stationary waves.	4
14.	Sound waves in air – Sound velocity – Resonance in air tubes – Doppler effect.	3
Part2		
1	General introduction	2
2	Archimedes principle	2
3	Density of a solid	2
4	Joule equivalent	2
5	Sound velocity	2
6	Surface tension coefficient	2
7	Viscosity coefficient	2
8	Specific heat of a solid	2
9	Young modulus	2
10	Reports evaluation and practical exam	2
Total		70

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Midterm exam I	8 th - 9 th	20%
2.	Midterm exam II	13 th - 14 th	10%
3.	Activities (Quiz)	Periodically	10%
4.	Lab reports	Weekly/ 13 th	15%
5.	Final Lab Exam	13 th	5%
6.	Final exam	15 th	40%
7.	Total	-	100%

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

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	“Physics for Scientists and Engineers”, by Serway R. and Faughn J. Publisher: Brooks/Cole; 8th edition (2010)
Supportive References	Fundamentals of Physics", by Halliday, Resnick and Walker, Ninth Edition, John Wiley & Sons, Inc (2011)





Electronic Materials	Web Sites on the internet that are relevant to the topics of the course & general physics websites such as: http://hyperphysics.phy-astr.gsu.edu/hbase/hframe.html www.sciencedirect.com
Other Learning Materials	Lecture notes and PowerPoints presentations prepared by the lecturer

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms
Technology equipment (projector, smart board, software)	Data show Laptop
Other equipment (depending on the nature of the specialty)	Not applicable for this course

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Indirect
Effectiveness of Students assessment	-Instructor -Program coordinator -Departmental council -Faculty council	Indirect
Quality of learning resources	<ul style="list-style-type: none"> • Students • Instructor • Faculty 	Indirect
The extent to which CLOs have been achieved	<ul style="list-style-type: none"> • Program coordinator • Instructor 	Direct
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	PHYSICS DEPARTMENT COUNCIL
REFERENCE NO.	NO. 4-45
DATE	27/09/2023 (12/03/1445)