



Course Specifications

Institution:	Faculty of Education in Zilfi.
Academic Department :	Physics
Programme :	Bachelor in Education
Course :	Vibrations and waves motion (Phys ^{٢٢٣})
Course Coordinator :	Elham Aldufeery
Programme Coordinator :	Dr. Nagwa Ibrahim
Course Specification Approved Date :	12./ 2 / 1437 H□



A. Course Identification and General Information

1 - Course title :	Vibrations and waves motion	Course Code:	Phys223
2. Credit hours :	(2 theory + 2 exercise) <input type="checkbox"/>		
3 - Program(s) in which the course is offered:	Faculty of Education in Zilfi/ physics department/ fourth level		
4 – Course Language :	Arabic <input type="checkbox"/>		
5 - Name of faculty member responsible for the course:	Elham Aldufeery		
6 - Level/year at which this course is offered :	fourth level		
7 - Pre-requisites for this course (if any) :	<ul style="list-style-type: none"> • General physics 2+ Mathematics for physics 1 		
8 - Co-requisites for this course (if any) :	<ul style="list-style-type: none"> • <input type="checkbox"/> 		
9 - Location if not on main campus :	(.....) <input type="checkbox"/>		
10 - Mode of Instruction (mark all that apply) <input type="checkbox"/>			
A - Traditional classroom <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> What percentage? <input type="checkbox"/>	50 % <input type="checkbox"/>
B - Blended (traditional and online) <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> What percentage? <input type="checkbox"/> % <input type="checkbox"/>
D - e-learning <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> What percentage? <input type="checkbox"/>	30% <input type="checkbox"/>
E - Correspondence <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> What percentage? <input type="checkbox"/> % <input type="checkbox"/>
F - Other <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> What percentage? <input type="checkbox"/>	20% <input type="checkbox"/>
Comments : <input type="checkbox"/>		

B Objectives

<p>What is the main purpose for this course?</p> <p>To provide the students with the basic concepts in some of mechanical Phenomena like Vibrations, simple harmonic oscillator and wave motion.</p> <p>Briefly describe any plans for developing and improving the course that are being implemented :</p> <p>Quick Quiz during the lecture to apply the newly acquired information, this will help to a good understanding.</p> <p>Use presentations to explain the course.</p>
--



C. Course Description

1. Topics to be Covered

List of Topics	No. of Weeks	Contact Hours
Introduction in Periodic motion, simple Harmonic motion and examples of simple Harmonic motion	1	2
Simple Harmonic motion Energy and simple pendulum	2	2
Damped oscillations, Light damped, severe damped, critical, Forced oscillations	3	2
Wave motion: Types of waves, mechanical waves, electromagnetic waves, moving wave model	4	2
General equation to describe waves, velocity of wave Spread in rods and gases	5	2
The reflection of wave, wave superposition principle	6	2
Waves interference	7	2
Sound waves: types according to frequency, speed of sounds waves in medium, sound levels in decibel	8	2
Resonance in air Column	9	2
Doppler effect and shock waves	10	2
Light waves, Hingis theory, Diffraction and light wave theory, Diffraction of x-ray, waves in 4 dimension		

2. Course components (total contact hours and credits per semester):

<input type="checkbox"/>	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	32	24	.....	.....	.....	56
Credit	32	12	.....	.....	.....	44

3. Additional private study/learning hours expected for students per week.

.....



4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		
1.1	Recognize the importance of wave motion and vibration.	Lecture & discussion	Med exams, Participation during the lecture & scientific activities
1.2	Identifying some of the important aspects of wave motion and some examples.	Lecture & discussion	Med exams, Participation during the lecture & scientific activities
١,٣	Identify the type of waves type.	Lecture & discussion	Med exams, Participation during the lecture & scientific activities
١,٤	Identify some of mathematical proof in achieve the laws.	Lecture & discussion	Med exams, Participation during the lecture & scientific activities
١,٥	.....	.....	.....
١,٦	.....	.....	.....
2.0	Cognitive Skills		
2.1	Student will have a knowledge in the laws of wave motion	lecture	exams
2.2	Student will know the basic physics quantities	lecture	exams
٢,٣	Student will know some of the physics quantities like work and energy	lecture	exams





	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
٢,٤	.....	.....	.....
٢,٥	.....	.....	.....
٢,٦	.....	.....	.....
3.0	Interpersonal Skills & Responsibility		
3.1	Communication skills with others	Discussions of study and collaborative work	Home work
3.2	Skills of take responsibility and lead the team	Discussions of study and collaborative work	Home work
٣,٣	Cooperative work skills	Discussions of study and collaborative work	Home work
٣,٤	.....	.....	.....
٣,٥	.....	.....	.....
٣,٦	.....	.....	.....
4.0	Communication, Information Technology, Numerical		
4.1	Develop the skills of observations, conclusion and explanation for the student	Ask questions and discussion	Quick Quiz & Med exam
4.2	develop the student personal to be a Dialogic personality	discussion	Quick Quiz & Med exam
٤,٣	Urged students to seek knowledge in several ways, the most important electronic tools	discussion	Quick Quiz & Med exam
٤,٤	Use electronics networks to serve the course	Cooperative learning Teamwork	Assessments the activities by each participating student
٤,٥	Develop the skills of teamwork and communication	Cooperative learning Teamwork	Assessments the activities by each participating student
٤,٦	.....	.....	.....
5.0	Psychomotor		





	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
5.1
5.2
5.3
5.4
5.5
5.6

5. Schedule of Assessment Tasks for Students During the Semester:

	Assessment task	Week Due	Proportion of Total Assessment
1	Test theoretical mid test	6	20
2	Post a scientific / Theory	10	10
3	Post a scientific / practice	11	10
4	Practice final test	13	20
5	Theoretical test final	14	40
6	.....	.....	.....
7	.....	.....	.....
8	.....	.....	.....

D. Student Academic Counseling and Support

2 office hour

E. Learning Resources

1. List Required Textbooks :

- **Physics for Scientists and Engineers, Serway and Jewett, 6th Edition, ISBN:0534408427, Thomson Brooks.**
-



<p>2. List Essential References Materials :</p> <ul style="list-style-type: none"> • Lecture Notes • •
<p>3. List Recommended Textbooks and Reference Material :</p> <ul style="list-style-type: none"> • The Physics of Vibrations and Waves - by: H.J. Pain, John Wiley & Sons, Sussex, 1999. • •
<p>4. List Electronic Materials :</p> <ul style="list-style-type: none"> • ocw.mit.edu/courses/physics/) • •
<p>5. Other learning material :</p> <ul style="list-style-type: none"> • • •



F. Facilities Required

<p>1. Accommodation</p> <ul style="list-style-type: none"> • ...lecture room and laboratory •
<p>2. Computing resources</p> <ul style="list-style-type: none"> • Laboratory with 13 computers devices. •
<p>3. Other resources</p> <ul style="list-style-type: none"> • • •

G Course Evaluation and Improvement Processes

<p>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching:</p> <ul style="list-style-type: none"> • Mid test





<ul style="list-style-type: none"> • Discussion in lectures • questionnaires distributed to the students to find out their views of the course and on the effectiveness of the decision and the method of teaching
<p>2 Other Strategies for Evaluation of Teaching by the Program/Department Instructor :</p> <ul style="list-style-type: none"> • Periodic review of the course by a committee study plans and schedules in a department •
<p>3 Processes for Improvement of Teaching :</p> <ul style="list-style-type: none"> • Provide projectors in the rooms • Encourage students to introduce and declamation, and group discussions.
<p>4. Processes for Verifying Standards of Student Achievement</p> <ul style="list-style-type: none"> • The professor of the course exchange of correct sample of the home works or tests on a regular basis with a faculty member to another in the same decision in other educational institution. • •
<p>5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement :</p> <ul style="list-style-type: none"> • Evaluating courses every year by Committee for Quality. • Update decisions that need to be developed per year • Use of modern technological tools for ease of explanation courses

Course Specification Approved
Department Official Meeting No (4) Date 12 / 2 / 1437 H

Course's Coordinator

Name : Elham Aldufeery

Signature :

Date : 15/ 2 / 1437 H

Department Head

Name : Dr.Nagwa Ibrahim

Signature :

Date : ... / ... / H

