



Course Specification

— (Bachelor)

Course Title: Sound Oscillation and Waves

Course Code: MPHY26261

Program: Medical Physics

Department: Physics

College: Science

Institution: University of Bisha.

Version: One

Last Revision Date: 5 September 2023



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A. General information about the course:

1. Course Identification

1. Credit hours:	3 h
2. Course type	
A.	University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Track <input type="checkbox"/> Others <input type="checkbox"/>
B.	Required <input type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered:	3 rd . Level / 2 nd year
4. Course general Description	
This course is present the basic knowledge in oscillations and waves, and concerned with the study of simple harmonic motion, waves, superposition of the waves. and sound and hearing.	
5. Pre-requirements for this course (if any):	
NA	
6. Co- requirements for this course (if any):	
NA	
7. Course Main Objective(s)	
Recognize the fundamental of oscillations and waves.	

1. 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"> • Traditional classroom • E-learning 		
4.	Distance learning		

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	45
2.	Laboratory/Studio	
3.	Field	
4.	Tutorial	
5.	Others (specify)	



Total	45
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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 the simple harmonic motion, types of waves and superposition of the waves.	K1	Lecturing	Quizzes Homework Midterm exam
1.2	Recognize the basic concepts in sound and hearing, and Doppler effect.	K1		Final exam
2.0	Skills			
2.1	Solve problems in the simple harmonic motion and waves.	S1	Solve problems.	Quizzes Homework Midterm exam Final Exam.
2.2	Solve problems in the sound and Doppler effect.	S1	Solve problems.	Quizzes Homework Midterm exam Final Exam.
3.0	Values, autonomy, and responsibility			
3.1	Exhibit self-learning skills independently.	V2	Self-learning	Reports presentation

C. Course Content

No	List of Topics	Contact Hours
1.	<u>Simple Harmonic Motion</u> Introduction Hooke's Law Energy in Hooke's Law Deformations.	3
2.	Simple Harmonic Motion The Relationship Between Circular Motion and SHM	3



3.	Maximum Velocity in SHM Period and Frequency of SHM The Simple Pendulum	3
4.	Waves Introduction SHM and Waves Frequency, Wavelength and Speed	3
5.	The Form of the Wave Types of Waves Longitudinal wave Transversers waves	3
6	Superposition and Interference. Beats Reflection	3
7	Standing Waves Waves and Energy Complex Waveform	3
8	Sound and Hearing Introduction Sound Waves in Media Pressure Waves in Gases Waves in Solids and Liquids Acoustic Impedance	3
9	Pitch and Loudness Intensity, Loudness and the Decibel Scale	3
10	Resonance and Sound Generation The Ear The Doppler Effect	3
Total		30

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Homework, quizzes, reports, and presentation.	1: 10	10 %
2.	First term exam	7: 8	20 %
3.	Second term exam	12: 13	20 %
4.	Final exam	End of Semester	50 %





E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Introduction to Biological Physics for the Health and Life Sciences, 2 nd Edition, by Kirsten Franklin et. All, Wiley, 2019.
Supportive References	Physics for Scientists and Engineers, 10 th Edition, by Raymond A. Serway, John W. Jewett, BROOKS/COLE CENGAGE Learning, 2019.
Electronic Materials	- Blackboard. - PowerPoint presentations. - Digital library of University of Bisha https://ub.deepknowledge.io/Bisha
Other Learning Materials	NA

2. Required Facilities and equipment

Items	Resources
facilities	NA
Technology equipment	Smart board or Projector
Other equipment	NA

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Extent of achievement of course learning outcomes.	Teachers, students.	Direct (Final exams), Indirect (Questionnaire).
Effectiveness of teaching.	Teachers, students.	Indirect (Questionnaire)
Effectiveness of assessment.	Teachers, students.	Indirect (Questionnaire)
Quality of learning resources	Teachers, students.	Indirect (Questionnaire)
Quality of facilities available	Teachers, students.	Indirect (Questionnaire)
Fairness of evaluation	Peer reviewer.	Direct (Final exams reevaluation).

G. Specification Approval Data

COUNCIL /COMMITTEE	College of Science Council
REFERENCE NO.	1
DATE	5 September 2023



