Course Syllabi

Course Title and Code	PHYSICS 1 - PHYS110

- **Course Identification and General Information:**

Department	Deanship of Educational Services	Course Level	Level 1
Contact Hours	1 theory class per week for one hour 1 practical class per week for two hours	Credit Hours	2 (1+2)
Web Address	http://www.des.qu.edu.sa		

- **Course Instructor/Coordinator's Name:** Mr. Syed Ziaulhaq Andrabi

- **Textbook Title, Author, and Year:**

  - Biological Physics PYP (PHYS110) by Franklin, Deanship of Educational Services, Qassim University, Saudi Arabia, Wiley Custom, 2014, ISBN: 9781119921424

- **Other Supplemental Materials:**

  - Introduction to Physics, 9th Edition (2013), by John D. Cutnell and Kenneth W. Johnson. Wiley and Sons, Inc. ISBN 978-1-118-09243-9.
  - Principles of Physics, Ninth Edition (2011), by Halliday & Resnick. Wiley and Sons, Inc. ISBN 978-0-470-52463-3.
  - Sears and Zemansky's University Physics with Modern Physics, Thirteenth Edition (2012), by Young Freedman, Rearson. ISBN 13: 978-0-321-76218-4; ISBN 10: 0-321-76218-5.

- **Specific Course Information:**

  - **Catalog Description**: Biological Physics PYP (PHYS110) by Franklin
  - **Pre-requisites:** It requires the knowledge of physics at the high school.
  - **Co-Requisites:** None.
  - **Required, Elective, or Selected Elective:** None.

- **Specific Goals for the Course:** Summary of the main learning outcomes for enrolled students.

  - The aim of this course is to enhance the knowledge of students to understand the surrounding physical phenomena and also to provide students the most important laws in physics.
  - This course also prepares and develops student skills at PYP in the area of physics and provides students with the required knowledge in English to qualify them to the scientific colleges.
  - To enhance the thinking abilities of students in the area of physics.

- **Program Outcomes Addressed by the Course:**

This course provides the following outcomes with the following relationship:

Preparatory Year Program Outcome	Relationship to Course
1. The course contributes to the development of student skills in English writing, reading and conversation.	High
2. The course contributes to the development of student skills in computer and its application in learning process	Low
3. The course helps to develop the skill of the students in the learning process.	High
4. The course strengthens ties education collaborative learning (peer-to-peer and other appropriate sources).	Medium
5. The course fosters the development of student skills in creative thinking, innovative and positive.	Medium
6. The course instills the principles and positive communication within groups (enjoy the team spirit).	Medium
7. The course contributes to the development of student skills in methods of constructive dialogue.	Medium
8. The course fosters the development of student skills in making decisions.	Medium
9. The course helps to develop the skill of the students in problem solving.	high
10. The course helps to develop the skill of students on constructive criticism.	Medium
11. The course helps to develop the skill of students in compliance and accounting.	Low
12. The course helps to develop the skill of students in interaction with the University environment and for undergraduate study.	High
13. The course helps to develop the skill of students in interaction with the environment and the needs and attitudes of the community and science.	High

14. The course helps to develop the skill of students on effective interaction on student activities.	Medium
15. The course helps to develop student skills in the effective interaction in volunteer work.	Medium
16. The course helps to develop student skills in effective leadership.	Medium
17. The course helps to develop student skills in linking information to realistic applications.	High
18. The course helps to develop the skill of students on work ethic.	Medium
19. The course helps to develop student skills in estimating functional responsibility toward national growth.	Medium
20. The course helps to develop student skills in assessing the scientific career path chosen.	high

- **Brief List of Topics to be covered:**

- Kinematics
- Waves
- Sound and Hearing
- Pressure
- Fluid dynamics of non-viscous fluids
- Fluid dynamics of viscous fluids
- Thermodynamics and the body
- The nature of light
- Geometric Optics
- The eye and vision
- Medical Imaging

- **Outcome Assessment:**

1. Direct Assessment

- ☒ Midterm Written Exam I
- ☐ Midterm Written Exam II
- ☒ Final Written Exam
- ☒ Quizzes
- ☒ Homework
- ☒ Integrative Projects
- ☐ Students' Portfolios
- ☐ Case Study
- ☐ Oral Exams
- ☒ Written Reports
- ☒ Participation in Lecture
- ☐ Illustrative Presentations
- ☒ Use of Computer Facilities by Students
- ☒ Reading of References Related to Course Topics
- ☒ Team Work
- ☐ Practice in the Lab

2. Indirect Assessment

- ☐ Pre-Course Questionnaire
- ☒ Post-Course Questionnaire
- ☒ Group Discussions
- ☐ Students' Interviews

Course Outline:

Week	Chapter	Sections	Topics	Pages
1		***Revision***	***Revision***	***Revision***
2	**Chapter 1** Kinematics	Section 1.1 Section 1.2 Section 1.3 Section 1.4 Section 1.5 Section 1.6	Introduction Distance and displacement Speed and velocity Acceleration Average velocity or speed Acceleration due to gravity	From: 12 to 18
3	**Chapter 8** **Waves**	Section 8.1 Section 8.2 Section 8.3 Section 8.4 Section8.5 Section 8.6 Section 8.7 Section 8.8 Section 8.9	Introduction SHM and waves Frequency, wavelength and speed The form of the wave Types of wave Superposition and interference Beats Reflection Standing waves	From: 31 to 36
4	**Chapter 9** Sound and Hearing	Section 9.1 Section 9.2 Section 9.3 Section 9.4	Introduction Sound waves in media Pitch and loudness Resonance and sound generation	From:41 to 48
5	**Chapter 9** Sound and Hearing	Section 9.5 Section 9.6	The Ear The Doppler Effect	From:49 to56
6	**Chapter 11** **Pressure**	Section 11.1 Section 11.2 Section 11.3 Section 11.4	Introduction Pressure Density Pascal's Principle	From: 68 to 72

7	**Chapter 11** **Pressure**	Section 11.5 Section 11.6	Measurement of pressure Pressure and human body	From: 73 to 79
8	**Chapter 14** Fluid dynamics of non-viscous fluids **Chapter 15** Fluid dynamics of viscous fluids	Section 14.1 Section 14.2 Section 14.3 Section 14.4 Section 15.1 Section 15.2 Section 15.3	Introduction Definition of some key terms The equation of continuity Bernoulli's Equation Introduction Viscosity Turbulence	From: 87 to 93 From: 95to 97
11	**Chapter 22** Thermodynamics and the body	Section 22.1 Section 22.2 Section 22.3 Section 22.4 Section 22.5	Introduction The first law Energy and the body Thermoregulation Temperature and Health	From:107 to 110
12	**Chapter 29** The nature of light	Section 29.1 Section 29.2 Section 29.3 Section 29.4 Section 29.5	Introduction Electromagnetic waves Reflection Refraction Dispersion	From:117 to 127
13	**Chapter 30** Geometric Optics	Section 30.1 Section 30.2 Section 30.4 Section 30.6	Introduction Ray Diagrams Spherical Mirrors Lenses	From128 to141

14	**Chapter 31** The eye and vision	Section 31.1 Section 31.2 Section 31.3 Section 31.4 Section 31.5 Section 31.5 Section 31.1 Section 31.2 Section 31.9	Introduction The parts of the eye Emmetropia Myopia Hypermetropia Prebyopia Astigmatism	From:144 to 152
15	**Chapter 38** Medical Imaging	Section 38.1 Section 38.2 Section 38.3 Section 38.4 Section 38.5 Section 38.6 Section 38.7	Introduction X-ray Imaging CT Scan PET Scan Gamma camera and SPECT Diagnostic procedure: dose Ultrasound sonography	From: 180-185

Marks distribution for Phys110

1) 5 marks for quiz 1
2) 5 marks for quiz 2
3) 30 marks for Midterm Exam
4) 60 marks for Final Exam