



Sichuan University-Pittsburgh Institute

Course Syllabus
PHYS0174-Physics for Science & Engineering 1
Spring 2019

Instructor Information

Instructor: Dr. Lin Fang (Section 1 & 3)
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Office Hours: Wed. 13:00-15:30 (other times appointment is required)
Teaching Assistant: Mr Zhao Jinyu (Tel: 115756217545)

Instructor: Dr. Yousef Faraj, Associate Professor (Section 2)
Office Location: 123, Zone 4 SCUPI
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Office Hours: Wed. 13:00-14:00
Teaching Assistant: Miss Liu Meijun, 564851778@qq.com, Thu. 19:20-21:00, 216 Zone 4

Course Identification

Course Code: PHYS0174
SCU Course ID: 312008040
Course Name: Physics for Science & Engineering 1
Course Credit: 4 Credits, Compulsory (Required)
Course Location: 103, Zone 3 SCUPI
Class Times:

Dr. Lin Fang:	Tues.10:15-11:55	Dr. Yousef Faraj:	Wed. 10:15-11:55
	Tues.10:15-11:55		Thur. 13:50-15:30
	Wed. 15:40-17:30		
	Fri. 10:15-11:55		

Course Description/Overview & Topics

As the first part of a two-semester introduction to general physics, this course introduces students to the basic principles of classical Newtonian mechanics and gravitation. Topics covered include motion in one-, two-, and three-dimensions, Newton's Laws, work and energy, rotational motion, momentum, gravitation, fluid mechanics, harmonic motion and thermodynamics.

Course Topics:

Part 1:

Measurement (Ch. 1)
Motion along a Straight Line (Ch. 2)
Vectors (Ch. 3)
Motion in Two and Three Dimensions (Ch. 4)
Force and Motion (Ch. 5-6)

Part 2:

Energy and Work (Ch. 7-8)
Linear Momentum (Ch. 9)
Rotation (Ch. 10)
Angular Momentum (Ch. 11)
Equilibrium and Elasticity (Ch. 12)

Part 3:

Gravitation (Ch. 13)
Fluids (Ch. 14)
Oscillations (Ch. 15)
Waves (Ch. 16-17)
Thermodynamics (Ch. 18-20)

Course Objectives & Learning Outcomes

The course is designed to provide Engineering students an introductory overview of physics, spanning from the description of the fundamental quantities such as time, distance, and mass, description of nature of using Newtonian mechanics and its application to fundamental understanding of Classical Thermodynamics.

Course learning outcomes:

1. Interpretation of different units and scales of measurable quantities
2. Vectors to describe and analyze motion
3. Motion of particle in one-, two- and three-dimensions
4. Newton's laws and their application to simple physical systems, and using FBD
5. Interrelate the concepts of physical work, forces, potential, and kinetic energy
6. Principle of energy conservation and its application to mechanical systems
7. Concepts of torque and angular momentum and application to rotation of rigid bodies
8. Application of Newton's law of gravitation to planetary motion
9. Understanding basic and introductory Classical Thermodynamics

Course Resources

Course Website(s):

- Blackboard (BB) <<https://learn.scupi.cn/>>

Required Course Textbook:

- Fundamental of Physics, by R. Resnick & D. Halliday, © 2014 John Wiley & Sons, 10th ed., ISBN-13: 978-1-118-23061-9

Grading Scheme

Grading System:

Letter Grade	Percentage	Rating
A	92% and above	Excellent
AB	85% – 91%	Very Good
B	80% – 84%	Good
BC	75% – 79%	Above Average
C	70% – 74%	Average
CD	60% – 69%	Below Average
D	50% – 59%	Inferior
F	49% and below	Failure
I	Incomplete; given only when a student is unable to complete a segment of the course because of circumstances beyond the student's control. A grade of incomplete may be given only when approved in writing by the department chair or school dean.	
X	Conditional, with no grade points; given only when the student is at fault in failing to complete a minor segment of a course, but in the judgment of the instructor does not need to repeat the course. It must be made up within the next semester in residence or the grade becomes a failure (F).	

Course Grading

Grades will be based on the following:

Quizzes & Homework (8 to 10 as time permits)	30%
Midterm Exam (Late April or Early May)	30%
Final Exam (Late June)	40%
Total	100%

Course Policies

1. Attending all the lectures is strictly required. Failure to attend any lecture without a reasonable excuse and/or producing an appropriate evidence will be subjected to some percentage mark cut (final mark).
2. Exams will be closed-books and closed-notes. Notes and key equations will be provided. If necessary, plots and tables will either be provided prior to the exam via BB or during the exam.
3. Quizzes will mainly be multiple-choice type, and administered during class hours.
4. Homework mainly consists of Multiple Choice Questions, designed to assess the students' ability to recall basic and foundational pieces of knowledge related to particular sections of the course and to encourage the students to review the key concepts they have had during the lecture. Some questions within the MCQs are specifically designed to assess the students' ability to think analytically about the subject.
5. The due dates of homework will be strictly enforced. A delay in submitting any homework will be subjected to 5% mark cut per day for the duration of three days, after which the homework will not be accepted and 0% mark will be assigned for that particular homework.
6. Exams will require calculations, analyses and conclusions. These will be administered off-class hours.
7. In normal circumstances, make-up exams and quizzes will not be allowed. However, they may be allowed in some rare cases such as health issues, family emergencies, approved university-related functions, course conflicts. A letter of request (with a supporting evidence) has to be submitted to the instructor and/or the department for approval.
8. All students are required to actively engage in classroom discussions.

Plagiarism Rules

Mobile phones, iPods, PDAs, or any other electronic device is not to be used in the classroom and examination room. Please make sure to bring a calculator with you to class and during the exams and quizzes. Calculators on other devices are strictly prohibited. Information exchanges on these devices during class are also prohibited and may violate the Academic Integrity Code of SCUPI (you are advised to familiarise yourself with this code on SCUPI website).

University Policies

Academic regulations and procedures are governed by University policy. Academic dishonesty cases will be handled in accordance to the University's policies. Please make sure you are aware of these policies.

NOTE:

The instructors reserve the right to make changes to this syllabus, anytime during the semester. All the students will be informed of any possible change through Blackboard.