SOUTHERN CALIFORNIA UNIVERSITY OF HEALTH SCIENCES
Accelerated Sciences Division

Syllabus Table of Contents

COURSE INFORMATION

Course Number (Prefix Code): PHYS216

Course Name: Physics II lecture

Course Description:

This is the second course of a two-term algebra-based sequence in general physics focusing on thermodynamics, electricity, magnetism, and optics. Topics will include, but not be limited to: kinetic theory of gasses, thermodynamic processes, waves, electric fields, flux and force, electricity, circuits, magnetism, electromagnetic interactions, induced currents, lenses, and mirrors. Students will be able to apply physical laws and principles to practical problems relevant to several scientific fields.

Course Delivery Model(s): Online, Online Interactive

Time Requirement:

Lecture Hours per term:	45
Laboratory Hours per term:	0
Total Hours per term:	45
Course Duration (weeks):	5
Credits:	3

Credit Hour Verification:
This list represents the average amount of time a student is expected to spend to successfully complete this course. *Total hrs/wk 27*

	Activity Type	Online-Interactive Hrs/wk	Online (Self-paced) Hrs/wk
Course Time	Lecture	9 hours	4 hours
	Discussion forums	1 hour	1 hour
	Audio/Video recordings	3 hours	8 hours
	Quizzes (outside of class)	2 hours	2 hours
	Homework	3 hours	3 hours
Preparation and Study	Study (assessment prep)	4 hours	4 hours
	Reading	4 hours	4 hours
Other	Exams (outside of class)	1 hour	1 hour

Total	Total per week	27 hours	27 hours
	Total per course	135 hours	135 hours

Prerequisites: PHYS 211 highly recommended

Co-requisites: PHYS 216L

This course may be taken again for credit the following number of times (repeatable): 5

LEARNING OUTCOMES, OBJECTIVES, & ALIGNMENT

Student Learning Outcomes

In successfully completing this course, students will be able to:

SLO
1. Explain the nature of the electric charge, electric force, electric potential, and electric field.
2. Use electric and magnetic fields to predict and explain the motion of charged particles.
3. Understand and utilize the concepts of current, voltage, resistance, and reactance to predict and explain DC and AC electric circuit behavior.
4. Identify characteristics of capacitors and perform calculations involving capacitance, voltage, and charge.
5. Explain the nature of magnetism and describe the behavior of magnetic phenomena.
6. Describe the concept of magnetic flux and apply it to Faraday's Law and Lenz's Law.
7. Explain the evidence supporting wave-particle duality and solve problems involving the wave behavior of light and matter and the particle behavior of light.
8. Solve problems involving Ideal Gas Law, Heat, and Thermodynamics.

TEXTBOOKS & MATERIALS

Required Textbook(s): Physics 5th Edition by Alan Giambattista, Betty Richardson, Robert C. Richardson

Required Materials: Working computer with a strong internet connection, camera, and a microphone. Scientific calculator.

Scientific Calculator*

*** Graphics or text-memory calculators are not allowed for use during quizzes or exams. If a student brings one, they will have to take the quiz without a calculator! Students are encouraged to obtain a scientific calculator with exponents and logarithms immediately, rather than the day before a quiz or an exam. It is important to be comfortable with the calculator being used, rather than to be struggling to locate the keys for certain mathematical operations. For example, a TI-30X IIS is acceptable.*

Provided Materials: The following materials will be provided:

Homework and quizzes platform (McGraw-Hill)

Technology Requirements

External resources: McGraw-Hill

Learning Management System: Canvas. If a student is unfamiliar with the Canvas learning management system, please visit the manuals and learning guides available in the Canvas Student Guide. It is important that students are comfortable and competent in using this system, as all course material and communication will be done via Canvas.

Navigating Canvas – the Canvas site has a large set of Canvas tutorials and videos for students.

Browser and Computer Requirements for Canvas: This course requires that students have access to Google Chrome or Microsoft Edge.

Examination System: Proctorio. We will be using the Proctorio Online Exam Proctoring Service in this course. Proctorio is a software extension in Chrome that uses your computer's screen, web cam, and microphone to create a remote proctored environment, and enables students to take exams via Canvas from any remote location. *Students must have a strong and stable internet connection for Proctorio to work well.* During exams, students, the computer, and all surrounding environment may be recorded.

In addition to the instructor(s) and Teaching Assistants(s) of this course, Proctorio and SCU Proctorio administrators are the only ones who will have access to the recordings. The Chrome browser extension must be installed before students can take any exam, and it can be removed once an exam is complete.

There will be an initial practice exam for students to become familiar with using Proctorio, which allows students to identify any potential issues prior to using this examination system.

Suggestions for completing online coursework: Save work often; this includes backing it up on multiple devices or cloud applications. When submitting final papers on the Canvas learning management system (LMS), ensure that all files have been uploaded properly. Also make sure to keep a hard copy of all papers/projects in case of an unforeseen technological failure or outage.

EVALUATION OF STUDENT LEARNING

Grading scale:

Letter grade
A = 90% - 100%
B = 80% - 89.99%
C = 70% - 79.99%
D = 60% - 69.99%
F = 0.0% - 59.99%

Assessments:

Assessment Name	# of assignments	Weight	SLO Linkage
Participation	5-10	15%	1-8
Reading Assignments	9	10%	1-8
Check Your Understanding Quiz	9	20%	1-8
Homework	9	15%	1-8
Exams	2	40%	1-8

Course Topics:

Week 1	Module	Topic	Assessment Activity	SLO Linkage
1	1	Electric Forces and Fields	Reading assignment, Homework, Participation, and Check your Understanding.	1-8
	2	Electric Potential	Reading assignment, Homework, Participation, and Check your Understanding.	1-8
2	3	Electric Current and Circuits	Reading assignment, Homework, Participation, and Check your Understanding.	1-8
	4	Magnetic Forces and Fields	Reading assignment, Homework, Participation, and Check your Understanding.	1-8
3	5	Electromagnetic Induction	Reading assignment, Homework, Participation, and Check your Understanding.	1-8
	6	Reflection and Refraction of Light	Reading assignment, Homework, Participation, and Check your Understanding.	1-8
4	7	Temperature and the Ideal Gas Law	Reading assignment, Homework, Participation, and Check your Understanding.	1-8
	8	Heat	Reading assignment, Homework, Participation, and Check your Understanding.	1-8
5	9	Thermodynamics	Reading assignment, Homework, Participation, and Check your Understanding.	1-8

UNIVERSITY POLICIES

All university policies apply to this course and all others. For full policy information please consult the SCU Catalog. Additionally, program policies apply to students in each program as described in the Catalog and in SCU Health Handbook for clinical courses.

Drop Date: It is a student's responsibility to understand when to consider unenrolling from a course. Refer to the SCU Academic Calendar for dates and deadlines for registration. Also refer to SCU Academic Policies for information about the drop period.

Incomplete Policy: Under emergency/special circumstances, students may petition for an incomplete grade. See the SCU Catalog for Policies about Incomplete Grades

Academic Integrity: Students at this university are expected to maintain the highest degrees of professionalism, a commitment to active learning, and display integrity both in and out of the classroom. See the SCU SCU Academic Integrity Code.

Accessibility Services and Accommodations: The Office of Student Services provides support to students with disabilities requiring accommodation in concert with the lead faculty for this course. All students are encouraged to request accommodation as far in advance of when the accommodation will be required to allow the University to process the request and provide approved accommodation. To begin the process please request a consultation with the designated Accessibility Services Officer as soon as possible. Once the Office of Student Services approves the request, the letter of accommodation will be provided to the student and lead faculty member via email. The student should be certain to follow-up with the lead faculty member to plan for the specific accommodation needs for the course. Program requirements cannot be modified to accommodate a disability. Please see the catalog for details regarding Accessibility Services and Accommodations.

A complete list of University Services is available through MySCU, including:

- Tech Support information
- Veterans Support Services
- Resources for Title IX support though the Campus Safety tab
- Student Advocacy and Accountability resources

Learning Resource Center: Students can use the library's resources which provide students with an excellent collection of books, journals, electronic databases, and websites as well as consult with the librarian to help with the course.

Online Etiquette: In general, behavior in an online classroom should emulate the professional behavior expected in an on-ground classroom with a few additional requirements:

- Avoid using text slang and abbreviations such as "u" (instead of "you"), "TLDR" (Too Long, Didn't Read) or "TBH" (To Be Honest) - not everyone knows what they are. Do not use ALL CAPS for entire sentences or posts - this is seen as yelling at someone.
- Any form of personal attack or inappropriate response with other students or faculty is unacceptable. We will remove any discussion posts showing this and warn the author.
- If a student disagrees with someone's comments, they should do so respectfully and collegially and provide legitimate examples to support their side.
- Before pressing the submit button review comments, making sure nothing is coming across as defensive, too "know-it-all" or critical, or academically inappropriate. It is easy for someone to misinterpret the meaning when they cannot see facial expressions or hear the tone of voice.
- Avoid short, generic replies such as "I agree!", "I like it!" or "Funny!" – explain why, add another point in support of the idea, or raise a question to continue constructive dialogue.

Attendance: SCU policy defines attendance for all courses and specifies online courses as active, weekly participation in the course as described in the syllabus. Examples of activities could include, but are not limited to:

- Participating in weekly online chats or discussions
- Submitting or completing assignments
- Commenting on other student contributions
- Actively logged on and participating in class at least three times per week

See the Academic Policies page in the SCU Catalog for more details on Attendance Policy.

Accelerated Sciences Course Recommendations

- Read before and after each class. Skim the chapter before it is covered in lecture to become comfortable with some of the terms associated with each topic. Review each chapter after it is covered in class to enhance understanding of the material.
- Do not wait until the night before homework is due to start the assignment. Understanding of concepts will be enhanced if the time is taken to learn them beforehand and later review the material without being rushed.
- Stay focused by finding an environment to study with few distractions.
- Participate during class by taking notes and looking over them afterwards.
- Any topics covered in the course could be presented in subsequent examinations, so it is critical to prepare and learn all presented material.
- Remember that procrastination in an accelerated course can quickly prove disastrous! Failure to learn foundational principles can make all future material seem nearly incomprehensible, so make sure to budget time wisely over the next five weeks.

Specifically for synchronous courses:

- Ask questions for clarification when not understanding the material being covered.
- *Do not skip class, arrive late, or leave early.* Given the accelerated nature of our courses, every minute of class missed can have a real impact on student success in a course.
- Work on assigned problems as close to the time as when the topic is covered in class to increase understanding of specific concepts.
- Find a group of students to study with. This makes studying more fun and helps learning of the material by teaching to and learning from peers. Explaining these concepts to other students aids in mastery of what is covered.

Teaching Methods & Instruction

In synchronous classes with scheduled class times, lecture will be delivered in real time/live by the instructor. Students must adhere to the attendance policy set out by the instructor for the class. In asynchronous classes, students will review lecture content on their own time. Due to the individualized nature of the learning, students should expect to spend as much time as needed based on prior knowledge of foundational material and a realistic study schedule. Students should check both their schedule and the Canvas course page to confirm they are correctly enrolled in the chosen course modality.

Lecture Outline PowerPoints, Supplemental Videos, and Support Materials: The lecture outline is essentially a series of PowerPoint slides on the most important chapter topics that you should review before you begin the Reading Assignment. These slides will also serve as a good reference when completing homework and reviewing for exams. Supplemental videos and support materials contain videos or other items related to some of the most important or interesting topics in the chapter. Some videos show fun applications. Some videos are conceptual, and some videos are designed to help you master the calculations in this course. These are all optional learning materials.

Reading Assignment: Read the assigned sections in the chapter fully and complete any activities embedded in the SMARTBOOK reading assignment. Reading time will vary from module to module.

Homework: Homework problems are reflective of the type questions that will be on the exams. There is a difference between completing chemistry related word problems with access to help (book, instructor office hours, tutor, Google, etc.) versus completing problems independently. It is okay and encouraged to use all available resources to learn how to complete a certain type of chemistry problem. However, the long-term goal

should be obtaining the ability to complete exam problems without any aid. First homework must be done using Proctorio.

Check Your Understanding Quizzes: On Check Your Understanding pages, students will practice the module content that is covered using interactive study tools. These interactive study tools will help assess progress and identify areas for improvement. Additionally, interactives give students an opportunity to review and apply information presented in the course and in the online textbook before taking quizzes or high-stakes exams.

Exams: There are two exams in each class, a mid-term, and a final exam. There will be questions that are similar to all quizzes, homework, questions at the end of each chapter and any other activity given. The exams are all on Canvas. Please pay attention to the due dates. They are final and will not be extended. You must use proctoring methods required by the instructor.

- Note: Completing assignments open book (book, instructor office hours, tutor, Google, etc.) is different than testing in an exam environment. It is acceptable and encouraged to use all available resources to learn how to complete an assignment; however, the long-term goal should be to pass the exams without any outside aid.