

PHYS 21 Course Outline as of Fall 2015**CATALOG INFORMATION**

Dept and Nbr: PHYS 21 Title: GENERAL PHYSICS PART II

Full Title: General Physics Lecture Part II

Last Reviewed: 4/22/2019

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	6	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable

Grading: Grade or P/NP

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly: PHYS 2B

Catalog Description:

Electricity and magnetism, light and modern physics.

Prerequisites/Corequisites:

Course Completion of PHYS 20

Recommended Preparation:**Limits on Enrollment:****Schedule of Classes Information:**

Description: Electricity and magnetism, light and modern physics. (Grade or P/NP)

Prerequisites/Corequisites: Course Completion of PHYS 20

Recommended:

Limits on Enrollment:

Transfer Credit: CSU;UC.

Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	Area		Effective:	Inactive:
	C	Natural Sciences	Spring 1982	
CSU GE:	Transfer Area		Effective:	Inactive:
	B1	Physical Science	Spring 1982	
IGETC:	Transfer Area		Effective:	Inactive:
	5A	Physical Sciences	Spring 1982	
CSU Transfer:	Transferable	Effective:	Spring 1982	Inactive: Fall 2021
UC Transfer:	Transferable	Effective:	Spring 1982	Inactive: Fall 2021

CID:
 CID Descriptor:PHYS 100S Algebra/Trigonometry-Based Physics: AB
 SRJC Equivalent Course(s): PHYS20 AND PHYS20L AND PHYS21 AND PHYS21L OR
 PHYS20A AND PHYS20B
 CID Descriptor:PHYS 110 Algebra/Trigonometry-Based Physics B
 SRJC Equivalent Course(s): PHYS21 AND PHYS21L OR PHYS20B

Certificate/Major Applicable:
 Major Applicable Course

COURSE CONTENT

Outcomes and Objectives:

Upon completion of the course, the student will be able to:

1. Analyze electric fields and potentials.
2. Relate capacitors to electrostatics.
3. Analyze alternating and direct current (AC and DC) circuits.
4. Describe magnetism in relation to electric current and calculate the force on a moving charge.
5. Solve problems related to Faraday's law of induction.
6. Explain the concepts related to geometric optics and optical systems.
7. Apply the concept of wave interference to explain interference patterns.
8. Describe the concepts of special relativity.
9. Explain various concepts related to atomic/nuclear and quantum physics.

Topics and Scope:

1. Electrostatics and fields
2. Electric potential
3. DC circuits
4. Capacitors
5. Resistivity
6. Magnetism and Ampere's law
7. Faraday's and Lenz's laws
8. AC circuits
9. Electromagnetic waves
10. Geometric optics
11. Lenses, mirrors, and optical instruments
12. Wave optics and polarization of light

13. Special relativity
14. Quantum physics
15. Atomic physics and the emission of light
16. Nuclear physics

Assignment:

1. Homework problem sets (12 - 20)
2. Quizzes (0 - 15)
3. Exams (3 - 5)
4. Final exam
5. Reading 20-40 pages per week

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments are more appropriate for this course.

Writing
0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problem sets

Problem solving
15 - 35%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None

Skill Demonstrations
0 - 0%

Exams: All forms of formal testing, other than skill performance exams.

Quizzes, multiple-choice and problem-solving exams

Exams
65 - 85%

Other: Includes any assessment tools that do not logically fit into the above categories.

None

Other Category
0 - 0%

Representative Textbooks and Materials:

- Essentials of College Physics by Serway/Vuille, Thomson-Brooks/Cole, 2007 (classic)
 Physics by Cutnell and Johnson, 9th edition, Wiley, 2012
 College Physics: A Strategic Approach by Knight, Jones, & Field, 3rd Edition, Addison-Wesley, 2014

