

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

Dept and Nbr: PHYS 21L Title: GENERAL PHYSICS LAB II

Full Title: General Physics Lab Part II

Last Reviewed: 2/25/2019

| Units   |      | Course Hours per Week |      | Nbr of Weeks | Course Hours Total |       |
|---------|------|-----------------------|------|--------------|--------------------|-------|
| Maximum | 1.00 | Lecture Scheduled     | 0    | 17.5         | Lecture Scheduled  | 0     |
| Minimum | 1.00 | Lab Scheduled         | 3.00 | 6            | Lab Scheduled      | 52.50 |
|         |      | 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: 0.00

Total Student Learning Hours: 52.50

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 3B

**Catalog Description:**

Lab experiments to accompany Physics 21.

**Prerequisites/Corequisites:**

Phys 21 completed or in progress.

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

Description: Lab experiments to accompany Physics 21. (Grade or P/NP)

Prerequisites/Corequisites: Phys 21 completed or in progress.

Recommended:

Limits on Enrollment:

Transfer Credit: CSU;UC.

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

**ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

|                            |  |                          |             |                     |
|----------------------------|--|--------------------------|-------------|---------------------|
| <b>AS Degree:</b>          | <b>Area</b>  |                          | Effective:  | Inactive:           |
| <b>CSU GE:</b>             | <b>Transfer Area</b>   |                          | Effective:  | Inactive:           |
|                            | B3   | Laboratory Activity      | Spring 1982 |                     |
| <b>IGETC:</b>              | <b>Transfer Area</b>   |                          | Effective:  | Inactive:           |
|                            | 5C   | Fulfills Lab Requirement | Fall 1981   |                     |
| <b>CSU Transfer:</b>       | Transferable   | Effective:               | Spring 1982 | Inactive: Fall 2021 |
| <b>UC Transfer:</b>        | Transferable   | Effective:               | Spring 1982 | Inactive: Fall 2021 |
| <b>CID:</b>                |  |                          |             |                     |
| 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, students will be able to:

1. Explain concepts of electric charge, current, resistance, potential difference and emf.
2. Construct and Analyze DC and AC circuits containing various combinations of resistance, coils and capacitors.
3. Measure voltages and currents using a digital multimeters and/or oscilloscopes.
4. Measure magnetic fields and determine the direction of currents induced by changing magnetic fields.
5. Explain concepts involving the formation of images by pin holes, mirrors and lenses.
6. Construct a microscope and telescope and explain their operation.
7. Determine the wavelength of light from a gas discharge tube using a spectroscope.
8. Measure the activity of a radioactive source.

### **Topics and Scope:**

Topics covered include:

1. Electrostatics
2. Current, resistance, voltage, emf
3. Resistors in series and parallel
4. Magnetic fields
5. Electromagnetic induction and transformers
6. Inductance, capacitance and resonance
7. Images formation
8. Microscopes and telescopes
9. Analysis of light by a spectroscope
10. Radioactive decay and the inverse square law of radiation

### **Assignment:**

1. Laboratory experiments (12 - 16)
2. Individual and/or group lab reports (12 - 16)
3. Quizzes (0 - 10)
4. Final exam

### 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.

Lab reports

Writing  
60 - 90%

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

None

Problem solving  
0 - 0%

**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, mid-term exam, and final exam

Exams  
10 - 40%

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

None

Other Category  
0 - 0%

### Representative Textbooks and Materials:

Instructor prepared lab manual