

CATALOG INFORMATION

Dept and Nbr: PHYS 3A Title: GENERAL PHYSICS LAB
Full Title: General Physics Lab
Last Reviewed: 11/17/2014

| 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 | 17.5 | 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:

Catalog Description:
Laboratory experiments to accompany Physics 2A.

Prerequisites/Corequisites:
Phys 2A completed or in progress.

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Lab experiments to accompany Physics 2A. (Grade or P/NP)
Prerequisites/Corequisites: Phys 2A completed or in progress.
Recommended:
Limits on Enrollment:
Transfer Credit: CSU;UC. (CAN PHYS 3A+PHYS 2A=PHYS2)(PHYS 3B+PHYS 3A+PHYS 2B+PHYS 2A=PHYS SEQ A)
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

| | | | | |
|----------------------------|--|--------------------------|-------------------|---------------------|
| AS Degree: | Area | | Effective: | Inactive: |
| CSU GE: | Transfer Area | | Effective: | Inactive: |
| | B3 | Laboratory Activity | Fall 1981 | |
| IGETC: | Transfer Area | | Effective: | Inactive: |
| | 5C | Fulfills Lab Requirement | Fall 1981 | |
| CSU Transfer: | Transferable | Effective: | Fall 1981 | Inactive: Fall 2021 |
| UC Transfer: | Transferable | Effective: | Fall 1981 | 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 105 | Algebra/Trigonometry-Based Physics A | | | |
| SRJC Equivalent Course(s): | PHYS20 AND PHYS20L OR PHYS20A | | | |

Certificate/Major Applicable:

Not Certificate/Major Applicable

COURSE CONTENT

Outcomes and Objectives:

1. Set up & perform a number of physics experiments using balances, calipers, meter sticks, thermometers, stop watches as well as computers with motion detectors, force probes, temperature probes and microphones.
2. Use spreadsheets to record data and calculate experimental results, and use computer graphing programs to construct graphs and analyze data.
3. Develop concepts of linear motion, simple harmonic motion, force, impulse and momentum using motion detectors and force probes.
4. Verify basic physics principles such as Newton's second and third laws of motion and conservation of momentum.
5. Use the principle of conservation of energy to determine moments of inertia.
6. Explain the three classes of levers and their mechanical advantage.
7. Measure the velocity of standing waves in strings and sound in resonating air columns.
8. Determine the coefficient of linear expansion for metal rods.
9. Measure the specific heat of a metal.
10. Write a formal lab report.

Topics and Scope:

1. Measurements and using spreadsheet to enter data and calculate results.
2. Graphical analysis of experimental data using computer graphing programs.
3. Motion in one dimension including uniformly accelerated motion.
4. Projectile motion.
5. Impulse, momentum and conservation of momentum.
6. Torque and levers.
7. Moment of inertia.
8. Simple harmonic motion.
9. Sound waves.
10. Standing waves in strings and air columns.
11. Coefficient of linear expansion.
12. Specific heat.

Assignment:

1. No less than 12 laboratory experiments.
2. One mid-term exam.
3. 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.

None

Writing
0 - 0%

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

Lab reports, Exams

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.

PHYSICS PROBLEMS TO SOLVE

Exams
20 - 30%

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

LAB REPORTS

Other Category
70 - 80%

Representative Textbooks and Materials:

Physics Laboratory Experiments by Wilson, 4th Edition, 1994, D.C. Heath & Co.