



SYLLABUS

CATALOG DESCRIPTION

This course is the first in a two-semester laboratory sequence, which accompanies the Calculus-based introductory physics sequence (215,216).

Prerequisites: It is strongly recommended that this course be taken at the time as PHYS 215. For students who have completed PHYS 215, this lab may be taken separately with permission of the instructor. Co-requisite: PHYS 215

Semester Offered: Fall and Spring

Common Student Learning Outcomes

Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...

BROAD AND SPECIALIZED LEARNING

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

CRITICAL THINKING

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

CULTURAL AND CIVIC ENGAGEMENT

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

EFFECTIVE COMMUNICATION

Students will exchange ideas and information with clarity in multiple contexts.

INFORMATION LITERACY

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

INTEGRATING TECHNOLOGIES

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.

Course Learning Outcomes

Upon successful completion of the course, the student will be able to...

1. Scientific Method
2. Measurement Procedures
3. Error Assessment
4. Data Reduction
5. Graphical, and Statistical Analysis
6. Computer Based Technologies
7. Technical Writing

8. Collaborative Learning

Specific Learning Outcomes

Upon successful completion of the course, the student will be able to...

1. Explain the scientific method.
2. Develop a reasonable hypothesis.
3. Maintain legible lab book with sufficient detail to permit replication of experiments.
4. Take measurements and report measured quantities to the appropriate precision.
5. Change raw data to a form that is physically meaningful.
6. Apply appropriate methods of analysis to raw data.
7. Use graphical and statistical methods to analyze data via computer based tools.
8. Carry out common laboratory procedures correctly.
9. Adhere to instructions on laboratory safety.
10. Perform logical troubleshooting procedures.
11. Present experimental results as written and oral reports.
12. Write lab reports in appropriate style and depth.
13. Work effectively as part of a team.
14. Relate laboratory work to general laws and principles of physics.
15. Apply scientific principles to real world situations.
16. Learn from mistakes and develop critical thinking skills.
17. Determine whether results and conclusions make sense.