PHYS 2215

Division: Natural Science and Mathematics
Department: Physics
Course: PHYS 2215
Title: Physics for Scientists and Engineers I Laboratory
Catalog Description:
PHSX 221L is the laboratory experience to accompany PHSX 2210. Students will learn techniques of measurement and data analysis and to communicate scientific results effectively in writing. Principles from the lecture section will be illustrated
General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 1; Lecture: 0; Lab: 3
Clock/Hour Requirements: 0
Offered for Non-Credit: No
Corequisites: PHYS 2210

Justification:
This course is a necessary component of the curriculum for geology, chemistry, computer science, physics, math, and engineering majors, in conjunction with the lecture portion of the series.

Student Learning Outcomes:

Students will know the important scientific laws and principles, such as Newton s Laws. Students will also understand that science is a process to gain knowledge.
Students will be able to assemble equipment needed for an experiment, make good measurements, take good data, and analyze the data.

Students will believe that the physical world is interesting, and that science experiments are a valuable way to understand it.

Content:
Laboratory experiments about measurement, acceleration, forces, rotational inertia, torques, harmonic motion, work, and waves are included in this course, as are some computer simulations using spreadsheets and programming languages.

General Education Outcomes:

6) Apply computational skills to a variety of contexts.
Students analyze numerical data in their lab write-up each week; they often present results in graphical and tabular formats.

7) Apply scientific reasoning to a variety of contexts.
Students must reason scientifically to make the equipment work and to understand the data they collect. They must communicate clearly to the reader and write insightful conclusions to their reports.

Key Performance Indicators:

Lab reports: 50%-75% of the final grade
Quizzes: 10%-20% of the final grade

Comprehensive final exam: 10%-20% of the final grade

Representative Text and/or Supplies:
Laboratory manual prepared by Snow College Instructors

Optimum Class Size: 18
Maximum Class Size: 24

Signatures:

I hereby submit this course syllabus:

Ted Olson, , Professor

I hereby find this course consistent with the goals and resources of the Physics Department:

Ted Olson, , Professor, Chair

I hereby find this course consistent with the goals and resources of the Natural Science and Mathematics Division:

Dan Black, EdD, Associate Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)