

COURSE PROPOSAL FOR NEW GENERAL EDUCATION COURSE

PHY 1352G-- General Physics I Laboratory

1. Catalog Description

- a. Course level: PHY 1352G
- b. Title: General Physics I Laboratory
- c. Credit: 0-3-1
- d. Term to be offered: F, S
- e. Short title: Gen Phys I Lab
- f. Course description: Experimental work demonstrating physics principles and their applications. Must be taken concurrently with Physics 1351G. Credit not given for both PHY 1352G and 1152G.
- g. Prerequisite: None
- h. The course is writing-active.

2. Student Learning Objectives

- a. In successfully completing this course, students will:
 - collect data by making the appropriate measurements and subsequently analyze the data to determine the relationship between the various physical variables. (critical thinking)
 - perform an error analysis of the data to determine the uncertainty in the results and make conclusions based upon these results. (critical thinking)
 - develop formal lab reports each week. (writing, critical thinking)
 - learn, understand and use scientific terminology, which will make them a more informed electorate. (citizenship)
 - be able to apply problem-solving techniques in the areas of physics, chemistry, engineering, and other areas of science.(critical thinking)

3. Course Outline

<u>Week</u>	<u>Content</u>
1	Reaction Time
2	Addition of Vectors: Force Table
3	One Dimensional Kinematics: Free Fall
4	Projectile Motion
5	Newton's Second Law: Rectilinear Motion
6	Atwood's Machine
7	Newton's Second Law: Circular Motion
8	Conservation of Momentum: Velocity of a Bullet
9	Conservation of Momentum: Aspirin Apparatus
10	Conservation of Momentum: Air Table
11	Static Equilibrium
12	Rotational Dynamics

- 13 Simple Harmonic Motion
- 14 Young's Modulus
- 15 Archimedes Principle

4. Evaluation of Student Learning

- a. Achievement of student learning will be evaluated based on the following:
 - Lab reports 80%
 - Lab quizzes 20%
- b. This course is a writing-active course. The 14 lab reports are all at least 4 pages long and are written according to APS (American Physical Society) guidelines.

5. Rationale

- a. **Segment**

This course will be placed in the physical science component of the scientific awareness segment of the general education program. The course meets the requirements of that segment since students in this course must:

 - (1) collect and analyze data to determine the relationship between variables.
 - (2) use error analysis techniques to determine the uncertainty in the results.
- b. **Level and prerequisites**

This course is the first lab course in the sequence of physics courses and is therefore, appropriately, a freshman level course. Co-requisite: PHY 1351G.
- c. **Similarity to existing courses and effect upon programs of any department**
 - (1) **Justify course if it is similar to an existing course**

This is a revision of Physics 1352 and maintains the same curriculum ID as 1352. This course is similar to PHY 1152G, but requires a higher level of math expertise.
 - (2) **Courses to be deleted if the new course is approved**

No courses will be deleted or added. This is a revision of an existing course.
 - (3) **Describe any relevant program modification if the course is approved.**

No modifications of any programs are expected.
- d. **Programs, majors, or minors in which the course is to be required or used as an appropriate elective.**

This course is required for majors in Physics, Chemistry, and Engineering and for majors and minors in Physics with teacher certification, and Chemistry with teacher certification.

6. Implementation

- a. **List faculty member(s) to whom the course will be assigned initially.**
Any Physics faculty member may be assigned to teach this course.
 - b. **Textbook(s) and supplementary materials to be used**
General Physics I Laboratory Manual, EIU Physics Dept., 1999
 - c. **Specify any additional costs to students.**
Students will continue to purchase the lab manual at the University Print Center.
 - d. **List the term in which the course will first be offered.**
Spring 2001
7. **Community College Transfer**
A community college course may be judged equivalent to this course.
 8. **Date approved by the department:** March 31, 2000
 9. **Date approved by the college curriculum committee:** April 18, 2000
 10. **Date approved by CAA:** October 19, 2000

Departmental contact person: Keith Andrew

Campus phone: 581-3220

PHY 1392G -- General Physics I Laboratory, Honors

1. Catalog Description

- a. Course level: PHY 1392G
- b. Title: General Physics I Laboratory Honors
- c. Credit: 0-3-1
- d. Term to be offered: F
- e. Short title: Gen Phy I Lab Hon
- f. Course description: Experimental work demonstrating physics principles and their applications. Must be taken concurrently with Physics 1391G. Corequisite: MAT 1440G or MAT 1441G. Credit not given for 1392G and 1352G or 1152G.
- g. Prerequisites: Admission to the University Honors Program
- h. The course is writing-active.