Course Outline

Course Title: Engineering Physics I
Submitted By: Jason Slattery

Semester Course Prefix and Number: PHYS 1571
Old Quarter Course Prefix and Number: PHYS 111 & 112

Number of Credits: 4
Number of Lecture Credits: 4
Number of Lab Credits: 
Number of Lab Hours: 
Number of Studio/Demonstration/Internship Credits: 

Semester(s) Offered: Class Size: 48/lecture

Course Purpose Code:

- 0 – Developmental Courses
- 1 – Non-transferable, General Education
- 2 – Technical course related to career programs
- 3 – College course which has the primary goal of applying certain concepts (e.g. vocal ensemble)
- 4 – Other college course not considered a part of general education (MNTC) e.g. computer science, health, physical education
- X 5 – Course which is intended to fulfill the Minnesota Transfer Curriculum (MNTC) requirements.
- 9 – Continuing Education/Customized Training specialized credit course (not occurring in 0-5)

Catalog Description:
This course will cover kinematics, Newton’s Laws, circular motion, gravity, mechanical energy, linear momentum, rotation motion and dynamics, elasticity, fluids, waves, sound, and thermodynamics.

Prerequisites and/or recommended entry skills/knowledge:
Course Prerequisite(s): None
Reading Prerequisite: None
Composition Prerequisite: None
Mathematics Prerequisite: Concurrent enrollment in MATH 1561 or instructors consent

Career Programs and Transfer Majors Accessing this Course:
Pre-Engineering, Physics, Pre-Medicine, Pre-Dental

Minnesota Transfer Curriculum Goal(s) partially met by this course if applicable: Notes: No more than two goals may be met by any one course. (Curriculum Committee review and the Chief Academic Officer's approval are required).

0. None
1. Communications
2. Critical Thinking
3. X Natural Sciences
4. Mathematical/Logical Reasoning
5. History and the Social and Behavioral Sciences
6. The Humanities and Fine Arts
7. Human Diversity
8. Global Perspectives
9. Ethical and Civic Responsibility
10. People and the Environment
Learning outcomes, including any relevant competencies listed in the Minnesota Transfer Curriculum:
The student will:
- Demonstrate an understanding of the laws of physics
- Critically analyze and solve problems with multiple steps
- Communicate laboratory findings, both orally and in writing (from PHYS 1581)
- Formulate and test hypotheses by performing laboratory experiments (from PHYS 1581)

Student assessment methods:
Assigned homework, exams, quizzes, and written laboratory reports (from PHYS 1581).
Use of instructional technology (includes software, interactive video and other instructional technologies):

Outline of the major course content:
I. Kinematics
II. Newton's Laws
III. Circular Motion and Gravity
IV. Mechanical Energy
V. Linear Momentum
VI. Rotation Motion and Dynamics
VII. Elasticity
VIII. Fluids
IX. Oscillations
X. Waves
XI. Sound
XII. Thermodynamics

Additional special information (special fees, directives on hazardous materials, etc.)
PHYS 1581 – Engineering Physics Lab I (1 lab; 1 credit) is required with this course.

Transfer Information: (Please list colleges/majors that accept this course in transfer.)

Approvals:

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