

MESABI RANGE COMMUNITY & TECHNICAL COLLEGE – VIRGINIA/EVELETH

Course Outline

Course Title: Engineering Physics I Submitted By: Jason Slattery  
Semester Course Prefix and Number: PHYS 1571 Approval Date:  
Old Quarter Course Prefix and Number: PHYS 111 & 112 Revision Date: April 2011

Number of Credits: 4 Number of Lecture Credits: 4  
Semester(s) Offered: Number of Lab Credits: Number of Lab Hours:  
Class Size: 48/lecture Number of Studio/Demonstration/Internship Credits:

**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
- 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.  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:**

Body	Representative Signatures	Date
Curriculum Committee		
Faculty Association		
Meet and Confer		
Chief Academic Officer		

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