

Course Title:

ETES 7090: Principles of Technology

Instructor / Faculty Name:

Roger B. Hill, Associate Professor; Department of Occupational Studies

Course Overview:

Technological literacy acquired through applied physics concepts and laws. Special emphasis on teaching the integration of mathematics, science, and technology scholarship.

Note: The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

Course Objectives:

Students who successfully complete this course will be able to:

- Provide instruction in applied physics using a unified concepts approach.
- Describe the fundamental concepts and theory of work, rate, resistance, and force transformers.
- Define fundamental terminology pertaining to applied physics.
- Demonstrate fundamental operating procedures for using applied physics laboratory equipment.
- Describe what force, pressure, voltage, and temperature differences have in common.
- Predict what happens in a system when the forces are balanced and when forces are unbalanced.
- Measure force in mechanical, fluid, electrical, and thermal systems.
- Demonstrate how thermal power and thermal rate are the same.
- Describe the nature of energy in mechanical, fluid, electrical, and thermal systems.
- Determine the relationship between work and energy.
- Explain why force transformers form a unifying principle in mechanical, fluid, and electrical systems.
- Develop instructional strategies for teaching applied physics.
- Apply appropriate learning theory to instruction of applied physics.
- Identify significant streams of research relevant to applied physics instruction in school settings.
- Assess curriculum models for physics instruction and evaluate the effectiveness of an applied physics approach.

Grading / Assessment Procedures:

Class participation.....	5%
Assigned exercises, laboratory activities, and presentations.....	35%
Mid-term examination.....	30%
Final exam.....	30%

Grading Scale: A ----- 90-100
 B ----- 80-89
 C ----- 70-79
 D ----- 60-69
 F ----- 0-59

Class Participation

Punctuality and attendance are important to successful completion of requirements for this course. For that reason, attendance will be taken at each class meeting. The class participation portion of the course evaluation will be based on punctual attendance to all class meetings, participation in class discussions, and appropriate care of computer equipment.

Note: Students with disabilities who require reasonable accommodations in order to participate in course activities or meet with course requirements should contact the instructor during regular office hours or by appointment.

Exercises, Projects, and Learning Activities

Several exercises, projects and learning activities will be used throughout the term to provide problem solving experience and opportunities for enriching the content covered in class. All written work should be prepared using appropriate word processor and printing technology and should be checked for correct spelling, punctuation, grammar, and usage.

Examinations

There will be two (2) examinations during the term, a Mid-Term (covering material from the first class meeting to the date of the exam) and a Final (a comprehensive exam related to any/all material covered during the term).

Dishonesty

All academic work must meet the standards contained in A Culture of Honesty. Each student is responsible to be informed about those standards before performing any academic work.

Dishonesty of any type, related to completion of course assignments, examinations, or other required activities is a serious offense. Should such an instance occur, it will be handled in accord with University regulations as described in the current edition of the Graduate Bulletin.

Drop Policy

The drop policy is described *Schedule of Classes*. If circumstances arise that will prevent a student from adequately fulfilling course requirements, action should be taken to drop the class prior to the mid-point of the term.