



## MTT 1007

**Division:** Career and Technical Education

**Department:** Industrial Technology

**Course:** MTT 1007

**Title:** Principles of Technology I

**Catalog Description:**

This applied physics course covers scientific concepts of force, work, rate, resistance, energy, power, transformers, and mathematic computations necessary to perform experiments involving momentum as applied to mechanical, fluid, and electrical systems found in modern industry. Laboratory activities featuring measurement and instrumentation are emphasized.

**General Education Requirements:** N/A

**Semesters Offered:** TBA

**Credit/Time Requirement:** Credit: 2; Lecture: 1; Lab: 2

**Clock/Hour Requirements:** 45

**Offered for Non-Credit:** Yes

**Prerequisites:** N/A

**Corequisites:** N/A

**Justification:**

Principles of Technology I helps students acquire skills for understanding and solving problems they will encounter in continued study of machine tool technology, as well as problems that they will encounter on the job. This course is approved by the program advisory committee.

**Student Learning Outcomes:**

Upon completion of this course, students will be able to understand and explain the following concepts:

- force and torque
- work
- linear, angular, and flow rate
- resistance
- potential and kinetic energy
- mechanical, fluid, and electrical power
- mechanical, fluid, and electrical force transformers
- linear and angular momentum.

Upon completion of the course, students will be able to use technical math concepts and computations for

solving practical application problems.

### **Content:**

Course objectives will be accomplished by providing students with learning experiences in the following subject areas:

- force and torque
- work
- rate
- resistance
- energy
- power
- transformers
- momentum
- technical mathematics.

### **General Education Outcomes:**

### **Applied Education Outcomes:**

1) Students will acquire entry-level skills specific to and appropriate for employment in their chosen field of study.

Math skills will be acquired by hands-on application of basic concepts through demonstration and experimentation. Instructor will observe students as they practice these skills and provide oral feedback.

### **Key Performance Indicators:**

Student Learning Outcomes will be assessed by two or more of the following Key Performance Indicators:

- exercises
- final test
- lab activities
- assignments
- performance in subsequent courses.

### **Representative Text and/or Supplies:**

- *Principles of Technology*, current edition, Center for Occupational Research and Development, (CORD).
- *Principles of Technology Student Resource Book*, current edition, Center for Occupational Research and Development, (CORD).



**Signatures:**

I hereby submit this course syllabus:

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Alan Hart, AAS, Instructor

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

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Alan Hart, AAS, Instructor, Chair

I hereby find this course consistent with the goals and resources of the Career and Technical Education Division:

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Michael P. Medley, MBA, Assistant Professor, Dean

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

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

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Michelle Olsen, MLS, Campus Librarian (Richfield Campus)