DMT 1007

Division: Career and Technical Education
Department: Automotive Technology
Course: DMT 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: No
Prerequisites: None

Corequisites: None

Justification:

Principles of Technology I helps students acquire skills for understanding and solving problems they will encounter in continued study of diesel and heavy duty mechanics technology, as well as problems that they will encounter on the job. It has been recommended and promoted by the Utah State Office of Applied Technology Education for all Trade and Industry (T & I) training programs.

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
- work
- rate
- resistance
- energy
- power
- transformers
- momentum
- technical mathematics.

General Education Outcomes:

6) Apply computational skills to a variety of contexts.
Students are required to apply mathematic computations to the fundamental concepts of physics contained in this course, including work, rate, resistance, energy, power, etc. Measurement and instrumentation activities are included in the curriculum.

7) Apply scientific reasoning to a variety of contexts.
This course requires students to understand the effects of force, energy, and other fundamental physics concepts. Students will apply scientific reasoning in the application of these concepts to laboratory exercises and in future discipline specific lab settings.

Key Performance Indicators:

In class:

- Student scores will be based on: written assignments (20%-30%), lab exercises (40%-50%), and quizzes and tests (20%-30%).

Following class:

- Course evaluation will be demonstrated by student 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).

Optimum Class Size: 10
Maximum Class Size: 18

Signatures:

I hereby submit this course syllabus:

Dale Jensen, ,

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

Brent Reese, BS, Associate Professor, Chair

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

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:

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

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)