AUTO 1715

Division: Career and Technical Education
Department: Automotive Technology
Course: AUTO 1715
Title: Applied Technical Math
Catalog Description:

This course covers the principles of algebra and geometry as they apply to problem solving in the Applied Technology Education (ATE) division programs. It includes the quadratic equation, exponents and radicals, polynomials, constructions of geometric shapes, the circle concept, and applications of volume and shapes.

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 3; Lecture: 3; Lab: 0
Clock/Hour Requirements: 45
Offered for Non-Credit: No
Prerequisites: None

Corequisites: None

Justification:

This basic technical math course meets the math requirement for those who transfer to Weber State University in Automotive Technology. It qualifies as the math option used for AAS degrees in the following technical courses: Art and Graphic Communications, Automotive Technology, Collision Repair and Refinishing Technology, Culinary Arts, Diesel and Heavy Duty Mechanics Technology, Drafting Technology, Machine Tool Technology, and Welding Technology. It gives students the background necessary to solve problems which they will encounter on the job. It is approved by the program advisory committees.

Student Learning Outcomes:

Upon successful completion of this course, students will be able to:

- understand the concepts of signed numbers, order of operations, and how to work with formulas
- use simple expressions and equations
- understand how to use variables and constants and apply the basic principles of real numbers
- solve equations that include exponents and radicals
- solve for variables as they apply to polynomials
- know the relationship of points, lines, and planes and how to work with them in drawings
- solve for different angles and know different angular relationships as they apply to segments
- have a basic understanding of triangular relationships
- know and solve the basic properties of different shaped polygons
- understand and work with the basic concepts of a circle
- understand and solve problems using ratios and proportions

- solve problems involving equations, formulas, Ohm's Law, power law, and combinations thereof
- solve problems dealing with AC and DC theory.

Content:

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

- basic concepts of algebra, including signed numbers, formulas, and the order of operations
- basic properties of real numbers and working with expressions and equations
- powers and roots of numbers
- equations which include polynomials
- points, lines, and planes
- angles and triangles
- different shaped polygons
- circles
- AC and DC theory, Ohm s Law, power law, and combinations thereof.

General Education Outcomes:

6) Apply computational skills to a variety of contexts.
Mathematical skills acquired in this course will be applied in future lab settings. Students will compute discipline specific problems and apply mathematical concepts to content specific exercises.

Key Performance Indicators:

In class:

- Students will be evaluated by completed assignments for each topic, proficiency demonstrated on end of unit examinations, and passing a final test that specifically addresses problems found in their specific disciplines. The final grade will be based on: 25% assignments, 25% unit exams, and 50% final test.

Following class:

- The knowledge and skills acquired in this course will be demonstrated in subsequent courses related to their technical specialities.

Representative Text and/or Supplies:

- *Practical Problems in Mathematics*, current edition, Delmar Publishers.

Optimum Class Size: 12
Maximum Class Size: 20

Signatures:

I hereby submit this course syllabus:

Brent Reese, BS, Associate Professor

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)