IED 190 Course Outline as of Fall 2019

CATALOG INFORMATION

Dept and Nbr: IED 190 Title: INDUSTRIAL MATH Full Title: Industrial Mathematics Last Reviewed: 5/14/2018

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	1.50	Lecture Scheduled	1.50	17.5	Lecture Scheduled	26.25
Minimum	1.50	Lab Scheduled	0	6	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	1.50		Contact Total	26.25
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 52.50

Total Student Learning Hours: 78.75

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

Catalog Description:

Concepts of industrial mathematics geared to students pursuing careers in the automotive, diesel, machine tool and welding fields. Includes a study of basic math, fractions, decimals, conversions, fundamental algebraic equations and basic geometry.

Prerequisites/Corequisites:

Recommended Preparation:

Eligibility for ENGL 100 or ESL 100 and Course Completion of CSKLS 371

Limits on Enrollment:

Schedule of Classes Information:

Description: Concepts of industrial mathematics geared to students pursuing careers in the automotive, diesel, machine tool and welding fields. Includes a study of basic math, fractions, decimals, conversions, fundamental algebraic equations and basic geometry. (Grade or P/NP) Prerequisites/Corequisites:

Recommended: Eligibility for ENGL 100 or ESL 100 and Course Completion of CSKLS 371 Limits on Enrollment:

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree: CSU GE:	Area Transfer Area	Effective: Effective:	Inactive: Inactive:
IGETC:	Transfer Area	Effective:	Inactive:
CSU Transfer	: Effective:	Inactive:	
UC Transfer:	Effective:	Inactive:	

CID:

Certificate/Major Applicable:

Both Certificate and Major Applicable

COURSE CONTENT

Student Learning Outcomes:

At the conclusion of this course, the student should be able to: 1. Upon completion of the course, students will be able to:

Employ math and algebraic theories, concepts and skills to applications found in Automotive, Diesel, Machine Tool and Welding Technology.

Objectives:

Upon completion of the course, students will be able to apply the following math skills to the industrial technology field:

- 1. Analyze and solve whole number and decimal equations
- 2. Solve fractional equations
- 3. Convert decimal and fractional numbers
- 4. Solve equations for English to metric conversions
- 5. Solve algebraic equations related to the field

Topics and Scope:

I. Basic Math Operations as Related to Specific Areas of Industrial/Trade Technology. Addition, Subtraction, Multiplication and Division of:

- A. Decimals
- **B.** Fractions
- C. Graphs and charts
- II. Measurement Systems and Conversions, as Related to Machine and Auto Vocations A. Decimal and fractional conversions
 - B. Metric system
 - 1. Metric prefixes
 - 2. Metric Conversion
 - C. English to Metric Conversions
 - 1. Linear measurements- inches to millimeters
 - 2. Pressure- pounds per square inch (PSI) to bar

- 3. Torque -foot pounds to newton meters
- 4. Volume- cubic inches to cubic centimeters
- 5. Temperature- Fahrenheit to Celsius

III. Algebraic Equations

- A. Ohms law- voltage, resistance, and amperage calculations
- B. Gear ratios- single and multiple gear sets
- C. Hydraulic pressure and force calculations
- D. Percentages
- IV. Geometry, as Related to Engines and Hydraulics
 - A. Area of squares and circles
 - B. Volume of cylinders
 - C. Angles

Assignment:

- 1. Reading 10-20 pages per week
- 2. Homework problem-solving assignments (15 20)
- 3. Exams (2 5)

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments are more appropriate for this course.

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework assignments

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None

Exams: All forms of formal testing, other than skill performance exams.

Exams: Multiple choice, fill in, short answer

Other: Includes any assessment tools that do not logically fit into the above categories.

Writing 0 - 0%

Problem solving 20 - 50%

Skill Demonstrations 0 - 0%

> Exams 50 - 80%

Other Category

0 - 0%

None

Representative Textbooks and Materials: Practical Problems in Mathematics. 7th ed. Sformo, Todd. 2009 (classic) Instructor prepared materials