IED 190 Course Outline as of Fall 2012

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:

Transfer Credit:
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**	Effective:	Inactive:
CSU GE:	**Transfer Area**	Effective:	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

Outcomes and 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. 15-20 homework problem-solving assignments
3. 2 to 5 exams (multiple choice, fill in, short answer)

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.	Writing 0 - 0%

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

Homework assignments	Problem solving 20 - 50%

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

None	Skill Demonstrations 0 - 0%

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

Exams: Multiple choice, fill in, short answer	Exams 50 - 80%

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

None	Other Category 0 - 0%

Representative Textbooks and Materials:
Practical Problems in Mathematics 7th edition; Todd Sformo, 2009
Instructor prepared materials