IED 90A Course Outline as of Summer 2009

CATALOG INFORMATION

Dept and Nbr: IED 90A Title: TECHNICAL MATH
Full Title: Technical Mathematics
Last Reviewed: 1/26/2009

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	6	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00 Total Student Learning Hours: 157.50

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

Catalog Description:
Concepts of technical mathematics using electronic calculators to solve trade-related problems. Includes a study of fractions, decimals, percents, the metric system, area and volume, ratio and proportion, and fundamentals of algebra.

Prerequisites/Corequisites:

Recommended Preparation:
Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:

Schedule of Classes Information:
Description: Concepts of technical math using electronic calculators to solve trade related problems. Includes a study of fractions, decimals, percents, the metric system, area and volume, ratio and proportion, and fundamentals of algebra. (Grade Only)
Prerequisites/Corequisites:
Recommended: Eligibility for ENGL 100 or ESL 100
Limits on Enrollment:

Transfer Credit: CSU;
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:	Transferable	Effective:	Fall 1981	Inactive:	Fall 2015
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Outcomes and Objectives:
The student will:
1. Demonstrate basic mathematical concepts related to a trade related occupational field.
2. Solve basic mathematical problems associated with a trade-related occupational field.
3. Analyze, evaluate and solve mathematical word problems associated with a trade related occupational field.
4. Evaluate and demonstrate on-the-job uses of the mathematical concepts associated with an occupational field.
5. Use an electronic calculator in solving mathematical problems.
6. Use mathematical conversion tables and formulae.

Topics and Scope:

I. Fractions
   A. Terminology
   B. Common denominators
   C. Improper fractions and mixed numbers
   D. Addition, subtraction, multiplication, and division
   E. Practical applications in occupational areas
II. Decimals
   A. Terminology
   B. Addition, subtraction, multiplication,and division
   C. Rounding off
   D. Conversion to fractions
   E. Practical applications in occupational areas
III. Percentages
   A. Terminology and relationship to decimals and fractions

B. Determining percentages, discounts, and fractional parts of whole
C. Practical applications in occupational areas

IV. Metric System
A. Terminology
B. Relationship to English system
C. Use of conversion tables
D. Practical applications in occupational areas

V. Squares and square roots
A. Terminology
B. Right triangles and Pythagorean Theorem
C. Practical applications in occupational areas

VI. Perimeters, Areas, and Volume
A. Terminology
B. Basic geometrical shapes and formulas
C. Concrete foundations and other practical applications in occupational areas

VII. Ratio and Proportion
A. Terminology
B. Ratios; direct and indirect proportion
C. Gears, levers, inclined planes and other practical applications in occupational areas

VIII. Algebra Fundamentals
A. Terminology
B. Rules for evaluating algebraic expressions
C. Practical applications in occupational areas

Assignment:

Students will be required to complete:
1. Reading assignments that will average fifteen pages per week for full semester course.
2. Computational homework assignments averaging two per week or approximately thirty per semester.
3. Practical occupational problem assignments--approximately ten assignments during the semester.
4. Six quizzes, midterm, and final exams.

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 problems and class worksheets.	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.

Periodic tests and final exam	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:
Basic Mathematics. Slavin, Steve and Crisonino, Ginny. Pi R-squared publishers, 2nd edition 2006
Industrial Education 90A Syllabus, Power, T.C.