APTECH 90A Course Outline as of Fall 2015

CATALOG INFORMATION

Dept and Nbr: APTECH 90A Title: APPLIED MATHEMATICS
Full Title: Applied Mathematics
Last Reviewed: 10/4/2010

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	4.00	Lecture Scheduled	4.00	17.5	Lecture Scheduled	70.00
Minimum	4.00	Lab Scheduled	0	6	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	4.00		Contact Total	70.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 140.00 Total Student Learning Hours: 210.00

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:	CET 90A

Catalog Description:
An investigation of intermediate algebra topics with applications to problems encountered in surveying, civil engineering, construction technology, electronic & related engineering technologies.

Prerequisites/Corequisites:

Recommended Preparation:
Standard first year high school algebra course with "C" or better OR Course Completion of MATH 150B or MATH 151

Limits on Enrollment:

Schedule of Classes Information:
Description: An investigation of intermediate algebra topics with applications to problems encountered in surveying, civil engineering, construction technology, electronic & related engineering technologies. (Grade Only) (Grade Only)
Prerequisites/Corequisites:
Recommended: Standard first year high school algebra course with "C" or better OR Course

Completion of MATH 150B or MATH 151
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:
	B	Communication and Analytical Thinking	Fall 2009	Spring 2016
	B	Communication and Analytical Thinking	Fall 1981	Fall 2009
	MC	Math Competency		
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:
1.Evaluate ratio and proportion problems.
2. Solve linear equations and inequalities with one variable.
3. Analyze applications of algebraic measurements of geometric solids.
4. Solve systems of equations by use of graphing, addition, substitution and comparison methods.
5. Solve systems of equations by use of determinants and matrices.
6. Solve right triangle problems by the application of the Pythagorean Theorem.
7. Solve right triangle problems by the application of trigonometric functions.

Topics and Scope:

I. Fundamental concepts
  A. Real number system
  B. Scientific notation and engineering notation
  C. Measurement and operations with measurements
  D. Algebraic expressions
 1. multiplication
 2. division
  E. Exponents and radicals
  F. Linear equations
  G. Ratio and proportion
II. Review of geometry
  A. Angles and lines

B. Triangles
C. Quadrilaterals
D. Circles
E. Geometric solids
1. areas
2. volumes

III. Right-triangle trigonometry
A. Trigonometric ratios
B. Values of trigonometric ratios
C. Solving right triangles
D. Applications of the right triangle

IV. Equations and their graphs
A. Functions
B. Graphing equations
C. Straight lines
D. Parallel lines
E. Perpendicular lines
F. Distance formulas
G. Midpoint formulas

V. Factoring and algebraic fractions
A. Factoring algebraic expressions
B. Multiplication and division of algebraic fractions
D. Complex fractions
E. Equations with fractions

VI. Systems of linear equations
A. Solving a system of two linear equations
B. Solving a system of three linear equations
C. Determinants
D. Solving a system of linear equations using determinants

VII. Exponents and radicals
A. Exponents
B. Radicals
1. Addition
2. Subtraction
3. Multiplcation
4. Division
C. Equations with radicals

VIII. Trigonometric functions
A. Trigonometric function of any angle
B. Radian measure
C. Use of radian measure

Assignment:

1. Daily reading outside of class (20-40 pages per week)
2. Problem set assignments (1-6 per week)
3. Quizzes (1-4 per semester)
4. Exams, Mid-term and Final (4-8 per semester)
5. Projects (calculator explorations and application activities) (2-8 per semester)

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.

Problem sets	Problem solving 5 - 20%

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

Projects	Skill Demonstrations 5 - 10%

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

Objective examinations (multiple choice, true false, matching, completion, etc.), Quizzes, Mid-term and Final	Exams 70 - 85%

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

None	Other Category 0 - 0%

Representative Textbooks and Materials:
Technical Mathematics, 5th edition, 2006 Author: Caulter. Publisher: Wiley
Basic Technical Mathematics, 9th edition, 2008 Author: Washington Publisher: Prentice Hall