APTECH 90A Course Outline as of Spring 2007

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 emphasis on the investigation and application of polynomials and rational expressions, rational exponents, equations and inequalities, functions and relations, exponential and logarithmic functions, sequence and series and binomial theorem, theory of equations, and an introduction to numerical trigonometry involving trigonometric functions, tables, and applications of the right triangle to problems encountered in surveying, civil engineering, construction technology, electronic and related engineering technologies.

Prerequisites/Corequisites:

Recommended Preparation:
Standard 1st year HS algebra course with "C" or better or successful completion of MATH 150B or MATH 151 within the last four years.

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)
Prerequisites/Corequisites:
Recommended: Standard 1st year HS algebra course with "C" or better or successful completion of MATH 150B or MATH 151 within the last four years.
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:	Transferable	Effective:	Fall 1981	Inactive:	Spring 2016
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Outcomes and Objectives:
The student will:
1. Evaluate ratio and proportion problems.
2. Analyze applications of algebraic measurements of geometric solids.
3. Employ theories, concepts and skills of intermediate algebra to applications found in surveying, civil engineering, construction technology, and electronic technology.
4. Assess the application of complex numbers.
5. Propose the correct use of the Pythagorean theorem in the solution to problems within the areas of surveying, civil engineering,construction technology, and electronic technology.
6. Differentiate between various solutions to linear and non-linear equations through the use of algebra, determinants and matrices.

Topics and Scope:

Theories, concepts and skills of intermediate algebra with application in solving selected problems in surveying, civil engineering, construction technology, electronic and related engineering technologies.
1. Review of technical mathematics skills involving computation, algebra

and geometry.
2. Polynomials and Rational Expressions of an Algebraic Fraction.
3. Rational Exponents.
4. Equations and Inequalities.
5. Functions and Relations.
6. Exponential and Logarithmic Functions.
7. Sequence and Series, and Binomial Theorem.
8. Theory of Equations.
9. Introduction to Numerical Trigonometry involving trigonometric functions, tables, application of the right triangle.

Assignment:

Problem solving and application of:
1. Computational skills, ratio and proportion, measurement, power and roots, polygon, triangle, circle, other geometric solids.
2. Complex fraction, complex factoring, solution of rational and literal equations.
3. Simplification of expressions, radicals into fractional exponents, complex numbers, Pythagorean theorem.
4. Solution of linear and non-linear one variable equations, determinants and matrices.
5. Linear and quadratic equations, polynomials.
6. Graphing, solution of exponential and logarithmic equations.
7. Finite and infinite geometric sequence and series, arithmetic progressions, geometric progressions, sigma and factorial notation, binomial theorem.
8. Synthetic division, rational roots of polynomial equations.
9. Trigonometric functions, trigonometric tables, and trigonometric applications to the right triangle.

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.

Written homework	Writing 10 - 15%

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

Homework problems, Exams	Problem solving 25 - 30%

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

Performance exams	Skill Demonstrations 25 - 30%

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

Multiple choice, True/false	Exams 35 - 40%

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, 1999 Author: Linda Davis Publisher: Merrill
Applied Technical Mathematics,1999 Author: Merwin Ling Publisher: WCB