SYLLABUS

COURSE # AND TITLE: Math 116, Math for High Tech Careers **# OF CREDITS:** 3

CATALOG DESCRIPTION:

Instructs students in the knowledge of mathematics related to the electronics field. Topics include: scientific calculations, conversions, methods of algebra leading to solving and manipulation of formulas, relations, functions including logarithmic and exponential, radicals, fundamentals of trigonometry involving angular and circular functions, vectors and phasors.

Semester Offered: Fall, Spring
Prerequisites: Grade of "C" or better in MATH 096 *or* ACCUPLACER score of 40-60 (Algebra)

Common Student Learning Outcomes
Upon successful completion of San Juan College programs and degrees, the student will....

Learn	*Students will actively and independently acquire, apply and adapt skills and knowledge to develop expertise and a broader understanding of the world as lifelong learners.*
Think	*Students will think analytically and creatively to explore ideas, make connections, draw conclusions, and solve problems.*
Communicate	*Students will exchange ideas and information with clarity and originality in multiple contexts.*
Integrate	*Students will demonstrate proficiency in the use of technologies in the broadest sense related to their field of study.*
Act	*Students will act purposefully, reflectively, and respectfully in diverse and complex environments.*

GENERAL LEARNING OBJECTIVES:

Upon successful completion of this course, the student will have a working knowledge of the following content areas:

1. Engineering and Scientific notation, significant digits.
2. Conversions from one system of measurement into another.
3. Conversions from one number system to another.
4. Elementary algebraic functions and trigonometry.
5. Manipulating variable expressions.
6. Solving equations involving a single variable and multiple variables.

SPECIFIC LEARNING OUTCOMES:

Upon successful completion of this course, the student should be able to:

1.1 Convert from scientific notation to decimal notation and vice-versa.
1.2 Convert from decimal notation to engineering notation and vice-versa.
1.3 Use a calculator to represent scientific and engineering notation.
1.4 Handle significant digit calculations.
2.1 Recognize the various systems of measurement.
2.2 Convert from the International System of units to the US system and vice-versa.
2.3 Use metric prefixes.
2.4 Apply error analysis.
2.5 Work with parts per million.

3.1 Manipulate variable expressions and applications.
3.2 Solve linear equations and applications.
3.3 Solve literal equations and applications.

4.1 Employ the basic trigonometric functions and their inverses.
4.2 Apply trigonometry to solve basic problems.

5.1 Work with exponents and radicals.
5.2 Apply the basics of exponential and logarithmic functions.

6.1 Count in binary and hexadecimal number systems.
6.2 Convert from binary to decimal and vice-versa.
6.3 Convert from hexadecimal to decimal and vice-versa.
6.4 Convert from hexadecimal to binary and vice-versa.
6.5 Add and subtract in binary, octal and hexadecimal systems.

Other Requirements:
A scientific calculator is required.

Dean, School of Science: Frank Williams Date: 5/2/06

A current syllabus must be on file in the dean's office for every course being taught during a given semester.