

PALOMAR COLLEGE
COURSE OUTLINE OF RECORD FOR
DEGREE CREDIT COURSE

X Transfer Course X A.A. Degree applicable course
(check all that apply)

COURSE NUMBER AND TITLE: IT 100 Technical Mathematics

UNIT VALUE: 3

MINIMUM NUMBER OF SEMESTER HOURS: 48

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS

PREREQUISITE: None

COREQUISITE: None

RECOMMENDED PREPARATION: None

SCOPE OF COURSE:

Methods and experience in defining and solving mathematical problems in industrial technology. Special emphasis will be given to the application of these basic processes to the solution of the unique mathematical problems encountered in the areas of architecture, automotive, drafting, machine, welding, and woodworking technology.

SPECIFIC COURSE OBJECTIVES:

Successful students will be able to:

1. Explain the basic foundations of mathematics and describe the basis.
2. Apply the metric system to technical situations.
3. Solve technical problems related to your major using mathematics.
4. Measure a variety of objects and distances accurately.
5. Select the proper mathematical formula to expediently solve business and industrial problems.
6. Describe the operational and functional applications of a common hand-held calculator.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Preview 1-Introduction
- II. Addition/Subtraction of Whole Numbers

- III. Multiplication/Division of Whole Numbers
- IV. Working with Fractions
 - A. Multiplication/Division of Fractions
 - B. Addition/Subtraction of Fractions
- V. Addition/Subtraction of Decimals
 - A. Multiplication/Division of Decimals
 - B. Averages, Decimal Fractions, Exponents and Square Roots
- VI. Negative Numbers
- VII. Introduction to Percent
 - A. Percent Problems
 - B. Application of Percent Calculations
- VIII. Working with Measurement Numbers
- IX. Units and Unit Conversion
- X. Metric Units
- XI. Direct Measurement
- XII. The Language of Algebra-Solving Equations/Formulas
- XIII. Ration and Proportion
- XIV. Angle Measurements
- XV. Plane Figures
- XVI. Solid Figures
- XVII. Graphs in Technology
- XVIII. Applied Trigonometry

REQUIRED READING:

Carmen, Robert and Hal M. Saunders. Mathematics for the Trades. Upper Saddle River, New Jersey: Prentice Hall Publishers, 1986.

SUGGESTED READING:

Any mathematical reference text found in a library for the purpose of additional methodology and problem-solving practice.

REQUIRED WRITING:

Students are required to analyze a situation on their job or in their college major which can be solved mathematically. Students must write a report of not less than five pages on the problem and the solution. The pre-test also requires at least one page of writing.

OUTSIDE ASSIGNMENTS:

Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short-term classes.

A written assignment from the text book, covering material identical to or similar to that presented in the classroom session, is to be completed and submitted by the next class meeting. This assignment may cover information contained in more than one "session." The course also requires a pre-test, special written assignments, preparation for the mid-term, and final exam.

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

- lecture
- laboratory
- lecture-laboratory combination
- directed study

DISTANCE LEARNING:

This course may be offered as a distance learning course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.

Yes No

If yes, check all that apply:

- Television Course (Video one-way, e.g. ITV, video cassette, etc.)
- Online Course (Text one-way, e.g. newspaper, correspondence, electronic file, etc.)
- Two-Way Video Conferencing (Two-way interactive video and audio)
- One-Way Video Conferencing (One-way interactive video and two-way interactive audio)
- Computer Assisted Instruction (A specialized form of mediated instruction relying primarily on student access to information and prepared lessons or teaching materials through a computer terminal, but not under immediate supervision of a qualified instructor.)

GRADING POLICY AND STANDARDS (include methods of determining whether the stated objectives have been met by students):

25% Homework consists of written assignments from the text, covering material similar to that presented in the classroom. Homework is expected to be submitted by the next class meeting.

25% Quizzes are intended to determine the student’s level of progress with regard to the current lessons and are given throughout the semester.

20% Midterm examination half way through the semester to test for general knowledge of material studied in that interim.

20% A final examination consisting of a comprehensive review of the subject matter presented in the course.

10% Math paper on your career interest or major. Report should consist of not less than five pages and may describe a mathematical problem solving situation with regard to work or school.

IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?

Yes No Number of times course may be taken for credit: _____

If yes, identify specific provision of Title 5 Division 2 section(s), 55761-55763 and 58161 which qualifies course as repeatable:

CONTACT PERSON:

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SIGNATURES ON FILE