Form Version: February 2001

EFFECTIVE TERM: Fall 2003

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: Math 130 – Calculus for the Social Sciences

UNIT VALUE: 4

MINIMUM NUMBER OF SEMESTER HOURS: 64

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS

PREREQUISITE: A minimum grade of "C" in Math 110 or a passing score on the appropriate Placement Test.

COREQUISITE: None

RECOMMENDED PREPARATION: None

SCOPE OF COURSE: Functions and their graphs including exponential and logarithmic functions, single variable calculus, limits, differentiation, integration and their applications, multivariable calculus, with applications to business, social sciences and behavioral science. Not open to students with credit in Mathematics 140.

SPECIFIC COURSE OBJECTIVES: Successful students will be able to:

1. Calculate limits, derivatives and integrals for polynomial, rational, exponential and logarithmic functions.
2. Use derivatives to analyze and aid in graphing functions, to solve optimization problems, and to solve related rate problems.
3. Use differentiation and integration skills to solve relevant problems from business, economics, management science, social science, and life science.
4. Use critical thinking skills by explaining and presenting their problem-solving results and conclusions in a coherent written mathematical format.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE: At least the following topics will be covered:

1. Functions
   a. Graphing
   b. Applications
2. Limits
   a. Definition of limit
   b. Evaluation of limits
   c. Properties of limits
   d. Continuity
3. Derivatives
   a. Average and instantaneous rates of change
   b. Definition of derivatives
   c. Techniques of differentiation
   d. Higher-order derivatives
   e. Chain rule
   f. Applications
4. Exponential and Logarithmic Functions
   a. Definitions
   b. Derivatives and integrals
   c. Properties
   d. Applications
5. Integration
   a. Anti-derivatives
   b. Definite integrals
   c. Techniques of integration
   d. Integral tables
   e. Area under a curve
   f. Properties of definite integrals
   g. Improper integrals
   h. Applications
6. Function of several variables
   a. Introduction to multivariable calculus
7. Additional topics may be included at instructor's discretion.

REQUIRED READING:
Larson, Ron; Edwards, Bruce H. Brief Calculus An Applied Approach. Fifth Edition. Houghton Mifflin Company, Boston, New York, 1999.
OR
Latorre, Donald R.; Kenelly, John W.; Fetta, Iris B.; and others. Calculus Concepts. First Edition. Houghton Mifflin Company, Boston, New York, 1998.
OR
Any other comparable textbook.

SUGGESTED READING: None

REQUIRED WRITING: Problem-solving exercises on homework assignments and written tests are more appropriate. In addition, students may be required to write reports from one paragraph to several pages explaining concepts or explaining and interpreting solutions to non-routine or applied problems.

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.

INSTRUCTIONAL METHODOLOGY:

Check all that apply:
_X_ 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 _X_

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):

Computation of semester grade may include the following methods of evaluation: In-class exams, take home exams, computer lab assignments, homework assignments, essays or other evaluation methods. A comprehensive final exam (in class) is required. For example, the semester grade may be computed as follows:

Homework Assignments	0% - 20%
Computer Assignments	0% - 20%
Written Assignments	60% - 80%
Final	20% - 40%

IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?
Yes ____ No _X_ Number of times course may be taken for credit: _1_

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

CONTACT PERSON: Martha Martinez Extension: 2872

SIGNATURES ON FILE