El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA   **Mathematics**

COURSE RUBRIC AND NUMBER   **MATH 1325**

COURSE TITLE   **Introductory Analysis for Business and Social Sciences**

COURSE CREDIT HOURS

3	3	0
Credits	Lec	Lab

I.   Catalog Description

Continues MATH 1324. Introduces linear programming and calculus with emphasis on the differential calculus. **Prerequisite: MATH 1324 with a grade of "C" or better or by placement exam.**

II.   Course Objectives

Upon completion of this course the student will be able to:

A.   Unit I Algebra Review and Linear Programming
   1.   Solve and graph linear inequalities in one variable (optional).
   2.   Solve and graph systems of linear inequalities in two variables (optional).
   3.   Minimize and/or maximize and objective function subjected to constrains using graphical method (optional).

B.   Unit II Functions, Limits, Derivatives.
   1.   Define limit, continuity, average rate of change, tangent line and derivative.
   2.   Produce and use a table of values to find the limit of a given function.
   3.   Given a function, determine the intervals where the function is continuous.
   4.   Use the properties of limits to find the limit of a function at a given point.
   5.   Give a function, find the average rate of change on a closed interval.
   6.   Give a function, find the derivative by definition.
   7.   Given a function, find the derivative at a given point.
   8.   Given a function, find the equation of the tangent line at a given point.
   9.   Given a function, find the higher derivatives of the function.
   10. Determine where a function is discontinuous.

C.   Unit III ---Applications of the Derivative
   1.   Given a function, determine the intervals where it is increasing, where it is decreasing, and where it is constant.
   2.   Given a function, find the relative maximum and/or relative minimum.
   3.   Given a function, find the intervals where it is concave up and where it is concave down.
   4.   Given a function find the absolute maximum and absolute minimum on a closed interval.
   5.   Given a revenue function, find the marginal revenue function.
   6.   Given a cost function, find the marginal cost function.
   7.   Given a cost and revenue function, find the maximum profit.
   8.   Given verbal statements, formulate a function and maximize or minimize the function.
   9.   Find derivative of exponential and logarithmic function.

      10. Find the derivative implicitly.
      11. Use the derivative to find the velocity and acceleration of a particle in motion

  D. Unit VI---Indefinite Integrals
      1. Find how calculus can determine the areas of plane regions.
      2. Develop fundamental results about the anti-derivative.
      3. Find an anti-derivative.
      4. Use Sigma Notation to find sums.
      5. Evaluate indefinite integrals.
      6. Applications of indefinite integrals in business and economics.

  E. Unit V ----Definite Integrals
      1. Find the area under the curve
      2. Apply the Fundamental Theorem of Integral Calculus
      3. Applications of definite integrals in business and economics
      4. Find the area between two curves
      5. Integration by parts (optional).

III. THECB Learning Outcomes (ACGM)

Upon successful completion of this course, students will:
1. Apply calculus to solve business, economics, and social sciences problems.
2. Apply appropriate differentiation techniques to obtain derivatives of various functions, including logarithmic and exponential functions.
3. Solve application problems involving implicit differentiation and related rates.
4. Solve optimization problems with emphasis on business and social sciences applications.
5. Determine appropriate technique(s) of integration.
6. Integrate functions using the method of integration by parts or substitution, as appropriate.
7. Solve business, economics, and social sciences applications problems using integration techniques.

IV. Evaluation

There will be at least three in class exams (100 points each) and one required in class comprehensive final exam to evaluate student learning for the course. Homework, quizzes, or additional assignments may contribute to the grade as specified in the instructor's course requirements. The final grade will be assigned according to the following scale.

90-100	A
80-89	B
70-79	C
60-69	D
0-59	F

Note I and **W** grades will be assigned whenever the appropriate assignments and deadline have been met. To receive an I, the students must have completed at least 80% of the course with at least a 70 average. The proper forms must also be signed by both the student and the instructor before being submitted to the registrar.

Attendance: It is the student's responsibility to attend class and drop any course he/she may deem necessary by submitting the necessary paperwork to the registrar's office. Any student with 3 or more absences or missing two or more graded assignments before the last withdrawal date may be dropped by the instructor.

Note: after the last withdrawal date, the instructor cannot drop you from the class.

V.   Disability Statement (Americans with/Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815) and MDP Rm A-125 (831-7024).

VI.   6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.