COLLIN COUNTY COMMUNITY COLLEGE  
COURSE SYLLABUS

COURSE NUMBER: Math 1376
COURSE TITLE: Calculus for Business and Economics II
CREDIT HOURS: 3  LECTURE HOURS: 3  LAB HOURS: 1

ASSESSMENTS: None
PREREQUISITE: Math 1325
COREQUISITE: None

COURSE DESCRIPTION: (Continuation of MATH 1325) In this course, application of differential equations, functions of several variables, Lagrange Multipliers, Least Squares Modeling, multiple integrals and infinite series will be covered. Basic concepts are related to multivariable calculus. Graphing calculator required. Lab required.


SUPPLIES: Graphing calculator required

STUDENT LEARNING OUTCOMES:
Upon successful completion of this course, students should be able to do the following:

1. Evaluate definite, indefinite and improper integrals including application to finding areas, consumer and producer’s surpluses and volumes of solids
2. Use partial derivatives to determine local and absolute extrema with applications to continuous money flow, Lagrange Multipliers and total differentials (CT/CS)
3. Solve double integrals, separable and first order differential equations and find initial value problems
4. Find geometric and infinite series
5. Solve annuity and amortization problems with applications to business and economics (CT/CS)

COURSE REQUIREMENTS: Attending lectures, completing assignments, completing required exams and labs, and knowledge of calculator use are all required.

COURSE FORMAT: Lecture, lab and guided practice.

METHOD OF EVALUATION: A minimum of four proctored exams, a lab component grade,
and a proctored comprehensive final exam will be given. Homework and/or quizzes may be used in place of one exam or in addition to exams. The weight of each of these components of evaluation will be specified in the individual instructor’s addendum to this syllabus. All out-of-class course credit, including home assignments, service-learning, etc. may not exceed 25% of the total course grade; thus, at least 75% of a student’s grade must consist of proctored exams, and no student may retake any of these exams.

LAB STATEMENT: Labs are opportunities for students to apply the concepts taught in class. They fulfill the course’s learning outcomes while assessing the core objectives skills of critical thinking, communication, and empirical/quantitative analysis. The lab assignments must be completed outside of class and labs will be graded and recorded as part of the grading process. Lab credits should count for 10% - 25% of the overall course grade.

ATTENDANCE POLICY: Attendance is expected of all students. If a student is unable to attend, it is his/her responsibility to contact the instructor to obtain assignments. Please see the schedule of classes for the last day to withdraw from the course with a grade of W.

RELIGIOUS HOLY DAYS: In accordance with section 51.911 of the Texas Education Code, the college will allow a student who is absent from class for the observance of a religious holy day to take an examination or complete an assignment scheduled for that day within a reasonable time. A copy of the state rules and procedures regarding holy days and the form for notification of absence from each class under this provision are available from the Admissions and Records Office. Please refer to the current Collin Student Handbook.

ADA STATEMENT: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS Office, SCC-D140 or 972.881.5898, (V/TDD 972.881.5950) to arrange for appropriate accommodations. See the current Collin student Handbook for additional information.

ACADEMIC ETHICS: Please see section 7-2.2 of the Collin Student Handbook. Contact the Dean of Students at 972.881.5771 for the student disciplinary process and procedures.

COURSE CONTENT: Proofs and derivations will be assigned at the discretion of the instructor. The student will be responsible for knowing all definition and statements of theorems for each section outlined in the following modules.

MODULE 1: INTEGRATION

The student will be able to:
1. Learn about antiderivatives and indefinite integrals.
2. Learn integration by substitution.
3. Learn about definite integral and area.
4. Evaluate definite integrals using the Fundamental Theorem of Calculus.
5. Find area between two curves.
MODULE 2: FURTHER TECHNIQUES AND APPLICATIONS OF INTEGRATION

The student will be able to:

1. Learn integration by parts.
2. Find volume and average value of a function.
3. Learn about continuous money flow.
4. Solve improper integrals.

MODULE 3: MULTIVARIABLE CALCULUS

The student will be able to:

1. Learn equations and functions of several variables, surfaces and level curves.
2. Find partial derivatives.
3. Find relative maxima and minima.
4. Learn Lagrange multipliers.
5. Learn the chain rule and approximation by total differential.

MODULE 4: DIFFERENTIAL EQUATIONS

The student will be able to:

1. Find solutions of elementary and separable differential equations.
2. Solve linear first order differential equations.
3. Learn applications of differential equations.

MODULE 5: SEQUENCES AND SERIES

The student will be able to:

1. Learn about Geometric sequences.
2. Learn about annuities.
3. Learn about infinite series.