COURSE SYLLABUS
MATH 157 (CALCULUS - I [4-2])
2007-2008, Spring Semester

Instructors : Dr. Cansu BETİN, FEF-222
Dr. Erdal KARAPINAR, FEF-216 (Coordinator)

Catalog Data: Preliminaries, Limits and Continuity, Derivatives, Applications of Derivatives, Integration, Applications of Integrals, Trancendental Functions, Integration Techniques, L'Hospital's Rule, Improper Integrals, Sequences.

Textbook: Thomas' Calculus Early Transcendentals, 11th Edition 2006, Media Upgrade, Addison Wesley.

References:
1) Calculus: A New Horizon, Anton Howard, 6th Edition; John Wiley & Sons.
2) Calculus: A Complete Course, R.A. Adams, 3rd Edition; Addison Wesley.
3) Calculus with Analytic Geometry, C.H. Edwards; Prentice Hall.
4) Calculus with Analytic Geometry, R. A. Silverman; Prentice Hall.

Prerequisite: None

Goals: Math 157 is designed as a first semester course of engineering students. It covers all the material- limit, techniques of differentiation and integration to give the students the necessary differential calculus tools, concepts, and methods to work in engineering, science and mathematics. It encourages students to investigate mathematical ideas, techniques and processes graphically and numerically, as well as algebraically.

Make-up: Make-up exams will be given only if the proper medical documentation for the absence is received. Do not forget that the medical report must be submitted to student affairs in **three (3)** days after the last day of the report. Otherwise, it will not be accepted. **There will be no make-up for quizzes.**

Exam Dates and Grading Policy:

Exam	Ratio	Exam Date
Midterm I Exam	15%	March 15, 2008 (**Saturday**)
Quiz Exam I	5% (Bonus)	April 17, 2008 (**Thursday**)
Midterm II Exam	25%	April 19, 2008 (**Saturday**)
Quiz Exam II	5% (Bonus)	May 15, 2008 (**Thursday**)
Midterm III Exam	25%	May 17, 2008 (**Saturday**)
Final Exam	40%	Will be announced

REMARK:

1) All the students should **provide** student **ID** cards to proctors to serve as identification. Any student without an **ID** card **can not** take the exams.

2) The students who are going to take **make-up** exam for exams I and II, should see the coordinator of the course until the date **MONTH; DAY, 2008**

Attendance Policy

Attendance is an essential requirement of this course. Any student should attend **more than %80** lecture hours: If you do attend less than %80 of the lecture hours, you will get an **NA grade**. Class begins promptly and you are expected to be present. Late students will not be accepted.

COURSE CHART

Week	Date	Section Covered and Comments
1	February 18-22, 2008	**B.1.** Real Numbers and the Real Line (Sets and Numbers, Intervals, Solving Inequalities, Absolute Value, Solving Equations) **B.2.** Lines, Circles and Parabolas **1.1.** Functions and Their Graphs
2	February 25-29, 2008	**1.2.** Identifying Functions **B.3.** Trigonometric Functions **1.3.** Combining Functions, Shifting and Scaling Graphs **1.5.** Exponential Functions **1.6.** Inverse Functions and Logarithms.
3	March 3-7, 2008	**2.1.** Rates of Change and Limits **2.2.** Calculating Limits Using The Limit Laws **2.3.** The Precise Definition of a Limit **2.4.** One-Sided Limits and Limits at Infinity
4	March 10-14, 2008	**2.5.** Infinite Limits and Vertical Asymptotes **2.6.** Continuity **2.7.** Tangents and Derivatives **3.1.** The Derivative as a Function
5	March 17-21, 2008	**3.2.** Differentiation Rules for Polynomials, Exponentials, Products and Quotients **3.3.** The Derivative as a Rate of Change **3.4.** Derivatives of Trigonometric Functions **3.5.** The Chain Rule and Parametric Equations
6	March 24-28, 2008	**3.6.** Implicit Differentiation **3.7.** Derivative of Inverse Functions and Logarithms **3.8.** Derivatives of Inverse Trigonometric Functions
7	March 31-April 4, 2008	**3.9.** Related Rates **3.10.** Linearization and Differentials **4.1.** Extreme Values of Functions
8	April 7-11, 2008	**4.2.** The Mean Value Theorem(omit: Differential Equations) **4.3.** Monotonic Functions and First Derivative Test **4.4.** Concavity and Curve Sketching **4.5.** Applied Optimization Problems
9	April 14-18, 2008	**4.6.** Indeterminate Forms and L'Hospital's Rule **4.8.** Antiderivatives **5.2.** Sigma Notation and Limits of Finite Sums **5.3.** The Definite Integral

10	**April 21-25, 2008** **(April 23, Wed. Holiday)**	**5.4.** The Fundamental Theorem of Calculus **5.5.** Indefinite Integrals and the Substitution Rule **5.6.** Substitution and Area Between Curves **6.1.** Volumes by Slicing and Rotation about An Axis
11	**April 28-May 2, 2008**	**6.2.** Volumes by Cylindrical Shells **6.3.** Lengths of Plane Curves **7.1.** The Logarithm Defined as an Integral **8.1.** Basic Integration Formulas
12	**May 5-9, 2008**	**8.2.** Integration by Parts **8.3.** Integration of Rational Functions by Partial Functions **8.4.** Trigonometric Integrals
13	**May 12-16, 2008**	**8.5.** Trigonometric Substitutions **8.8.** Improper Integrals
14	**May 20-23, 2008** **(May 19, Mon. Holiday)**	**11.1.** Sequences
15	**May 26-30, 2008**	General Review

Note:

1) The content of this syllabus can be reformed by the coordinator at any time by informing the related department's head.
2) The student is supposed to be aware of the facts and notices written in this syllabus.
3) All announcements about the course will be in the web-page of the course.

(Official webpage of the course Math 157 http://math.atilim.edu.tr/~math157/)