

**ISTANBUL TECHNICAL UNIVERSITY**  
**SCIENCE AND LETTERS FACULTY- MATHEMATICS DEPARTMENT**  
**MTH103 CALCULUS I**  
**2008-2009 FALL SEMESTER**

**Course is given by :**

Name Surname	Office No	Telephone No	Office Hours	CRN	Course Day	Course Hours	Building	Room No
Ulviye Bařer	FEB B1-313	0542 5823315	Wednesday 15.00- 15.30	11373	Tuesday Thursday	1330/1629 0930/1129	INB INB	

**Text Book** : Thomas' Calculus, 10<sup>th</sup> Edition G.B Thomas, R. L. Finney and F.R. Giordano

**Topics** : 0. Preliminaries

(Lines, Functions and Graphs, Exponential Functions, Inverse Functions and Logarithms, Trigonometric Functions and Their Inverses, Parametric Equations )

1. Limits and Continuity

(Rates of Change and Limits, Finding Limits and One-Sided Limits, Limits Involving Infinity, Continuity, Tangent Lines)

2. Derivatives

(The Derivative as a Function, The Derivatives as a Rate of Change, Derivatives of Products, Quotients and Negative Powers, Derivatives of Trigonometric Functions, The Chain Rule, Implicit Differentiation)

3. Applications of Derivatives

(Extreme Values of Functions, The Mean Value Theorem and Differential Equations, The Shape of a Graph)

4. Integration

(Indefinite Integrals, Integral Rules; Integration by Substitution, Riemann Sums and Definite Integrals, The Mean Value and Fundamental Theorems, Substitution in Definite Integrals)

5. Application of Integrals

(Volumes by Slicing and Rotation About an Axis, Modelling Volume Using Cylindrical Shells, Lengths of Plane Curves)

**Homeworks** :

	Assigned Date	Due Date
<b>HOMEWORK 1</b>	<b>23.09.2008</b>	<b>16.10.2008</b>
<b>HOMEWORK 2</b>	<b>21.10.2008</b>	<b>6.11.2008</b>
<b>HOMEWORK 3</b>	<b>11.11.2008</b>	<b>28.11.2008</b>
<b>HOMEWORK 4</b>	<b>16.12.2008</b>	<b>30.12.2008</b>

Homeworks will be announced at [www.mat.itu.edu.tr/baser](http://www.mat.itu.edu.tr/baser) on the assigned dates.

**Midterm1** : 04/11/2008 Tuesday, 13.30-15.30am.

**Midterm2** : 02/12/2008 Tuesday, 13.30-15.30am.

**Final Exam** : The date will be announced by Student Affairs Office-SIS at [www.sis.itu.edu.tr](http://www.sis.itu.edu.tr)

**Attendance Requirement**: %70 of class attendance and the solution of the homeworks are required in order to take the Final Exam.

**Course Grade Calculation**:

$\% 25 * \text{Midterm1} + \% 25 * \text{Midterm2} + \% 50 * \text{Final Exam}$