Antalya Bilim University
Department of Business Administration
MATH - 111 Calculus for Social Sciences I
Fall 2019

Class time & Place: Friday 09:00 – 11:40 & A1-90/91

Office hours: You can reach me all week long **except for my class hours**.

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This course is designed to build on students' understanding of elementary mathematics and to expose them to some of the mathematical concepts that will be useful in the study of mathematical models in economics and the management sciences. Emphasis will be placed on the understanding and application of mathematical concepts, rather than just computational skills and the use of algorithms and formulas. The course is aimed at:

• Developing the mathematical skills needed to successfully navigate the seas of quantitative courses in economics and management studies.

• Developing an appreciation for the beauty and power of mathematics.

Course books: Students **DO NOT** have to buy any book or material. Lecturer will provide all the necessary materials for his students by combining the contents of following books:

- Tan, Soo T. *Applied Calculus for the Managerial, Life, and Social Sciences*. Cengage Learning, 2016.
- Barnett, Raymond A., Michael R. Ziegler, and Karl E. Byleen. *Calculus for business, economics, life sciences, and social sciences*. Pearson Prentice Hall, 2015.

Recommended readings: If you are interested in further/advanced reading about Calculus, you may see the following book:

- Stewart, James. *Calculus: early transcendentals*. Cengage Learning, 2014.

Academic Honesty and Plagiarism: It is considered cheating when an examinee during exams

■ gets unduly help or

- helps another examinee with answers or
- makes use of help other than permitted

Assessment Criteria: The criteria are listed below:

1) **Attendance & Participation (15%)**: You are strongly advised to participate in the classes.

2) **Assignments (15%):** Please be careful about the section **Academic Honesty and Plagiarism**.

3) **Midterm (30%):** Midterm examination will be as "*written examination*".

4) **Final exam (40%)**: Final examination will be as "*written examination*".

5) **Passing (%50):** The weighted average must be equal or greater than 50 to be able to pass the course successfully.

Course Schedule

Week	
Week 1	**1) Preliminaries:** Precalculus review I
	2) Preliminaries: Precalculus review II
Week 2	**1) Functions, Limits and The Derivative:** Coordinate System, Straight Lines
	2) Functions, Limits and The Derivative: Straight Lines (Continued)
Week 3	**1) Functions, Limits and The Derivative:** Functions and Graphs
	2) Functions, Limits and The Derivative: The Algebra of Functions
Week 4	**1) Functions, Limits and The Derivative:** Limits
	2) Functions, Limits and The Derivative: Limits (Continued)
Week 5	**1) Functions, Limits and The Derivative:** One-sided Limits
	2) Functions, Limits and The Derivative: Continuity
Week 6	**1) Differentiation:** The derivative, Basic Rules of Differentiation
	2) Differentiation: Basic Rules of Differentiation (Continued)
Week 7	**1) Differentiation:** The Product and Quotient Rules, The Chain Rule
	2) Differentiation: Marginal Functions of Economics
Week 8	**MIDTERM**
Week 9	**1) Differentiation:** Higher-order derivatives, Implicit Differentiation
	2) Differentiation: Differentials, Problem Solving
Week 10	**1) Applications of Derivative:** Appliations of the First Derivative
	2) Applications of Derivative: Appliations of the First Derivative
Week 11	**1) Applications of Derivative:** Curve Sketching
	2) Applications of Derivative: Problem Solving
Week 12	**1) Applications of Derivative:** Optimization I
	2) Applications of Derivative: Optimization II
Week 13	**1) Exponential and Logarithmic Functions:** Exponential and Logarithmic Functions
	2) Exponential and Logarithmic Functions: Compound Interest
Week 14	**1) Exponential and Logarithmic Functions:** Differentiation of exp and log Functions
	2) Review and Problem Solving