

MIDDLE EAST TECHNICAL UNIVERSITY NORTHERN CYPRUS CAMPUS

MAT-101 (4-0)4 MATHEMATICS FOR SOCIAL SCIENCES  
2009-10 Summer

SYLLABUS

**Instructor:**

Assist. Prof. Dr. Bertuğ Akıntuğ

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**Course Schedule:**

Monday 8:40 – 11:30

Tuesday 12:40 – 15:30

Wednesday 12:40 – 15:30

**Main Text:**

Introductory Mathematical Analysis by E. F. Haeussler, R.S. Paul, and R. Wood, 12<sup>th</sup> Edition, 2008.

**Grading:**

Mid-Term Exam : 35%

Final Exam : 45%

Quiz : 30% (%10 is bonus)

**Attendance:**

70% attendance is mandatory. If your attendance is below 70% (below 38 attendances out of 54 attendances) at the end of the course, you will not be allowed to take final exam and you will get **NA** grade.

**Course Web Site:**

The relevant course materials (if any) and announcements will be posted in the web page of the course (<http://www.metu.edu.tr/~bertug>).

**Catalog Content:**

Matrices and determinants. Inverse of a matrix, matrix polynomials. Systems of linear equations, parametric solutions. Functions of one and several variables: Limit, continuity and differentiation. Chain rule, implicit differentiation. Differential calculus, optimization, Lagrange multipliers. The definite integral. The indefinite integral. Logarithmic and exponential functions. Techniques of integration: Integration by substitution, integration by parts, integration by partial fractions. (Available at [http://www.ncc.metu.edu.tr/academic/Academic\\_Catalog.pdf](http://www.ncc.metu.edu.tr/academic/Academic_Catalog.pdf)).

**Course Objectives:**

This course is designed to prepare the students with an elementary knowledge of mathematics. At the end of this course the student will be expected to use basic mathematical concepts and methods in the analysis of the social sciences problems. Particular attention is paid to the relevant fundamental mathematical concepts and their applications.

**Course Outline:**

Functions and Graphs, Limits and Continuity, Differentiation, Curve Sketching, Integration, Multivariate Calculus, Matrix Algebra.