

MÉSZÁROS JÓZSEFNÉ,

NUMERICAL METHODS



A Műszaki Földtudományi Alapszak tananyagainak kifejlesztése a
TÁMOP 4.1.2-08/1/A-2009-0033 pályázat keretében valósult meg.

PREFACE

These lecture notes were made for students studying in English in the Faculty of Earth Science and Engineering of the University of Miskolc. They give an introduction to some well-known areas of numerical analysis.

The areas covered are: numerical methods of nonlinear equations and systems of equations, numerical methods of linear algebra, approximation of functions, and numerical methods of differential equations.

The fifth chapter (as an appendix) gives the definition of some mathematical notions that may be unknown to our students. Therefore we suggest the reader run through this chapter before studying the others.

The lecture notes contain several numerical examples and problems with solutions. A number of animations help readers to understand the working of the numerical methods.

Finally, we would like to express our thanks to *Professor John H. Mathews*, Ph. D. Emeritus Prof. of Mathematics, California State Univ. Fullerton, for allowing his animations to be used in these lecture notes.