AN INTRODUCTION TO GRAPH THEORY

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The book is primarily intended for use as textbook at the graduate level, but the first eight chapters can be used as a one-semester course in the undergraduate level for students of mathematics and engineering.

The final sections of several chapters introduce advanced topics and unsolved problems that are the object of current research in graph theory. Thus, the book can also be used by students pursuing research work in PhD programs.

The book consists of preface, 12 chapters, references, and index, the total size is 6+396 pages. The first chapter (*Introduction*) contains the basic definitions and theorems of graph theory. The second chapter (*Degree Sequences*) deals with degree sequences. The chapter contains much more results as other textbooks of graph theory. The following 6 chapters (*Eulerian and Hamiltonian Graphs, Trees, Connectivity, Planarity, Colourings, Matchings and Factors*) contain the basic results of the given topic. The last four chapters (*Edge Graphs and Eccentricity Sequences, Graph Matrices, Digraphs, Score Structures in Digraphs*) deals with advanced topics of graph theory. Especially rich material is gathered on score structures including many recent results of the author of the book and his coauthors.

The book is closed by 266 references on papers and books which appeared between 1736 and 2010 and by index.

In the textbook is disturbing the inconsistent notation of mathematical symbols in the text and in the figures: instead of italic they are often written by normal letters.

We recommend author to follow the authors (as D. E. Knuth, T. H. Cormen, N. A. Lynch) of popular American textbooks: to assemble and maintain on his homepage a list of errors of the book and later to publish corrected editions. Another proposition is to extend the material with the performance analysis of the described algorithms to make the textbook more informative for the students of computer science.

Despite of the errors the book contains valuable material therefore we recommend it to undergraduate, graduate and PhD students.