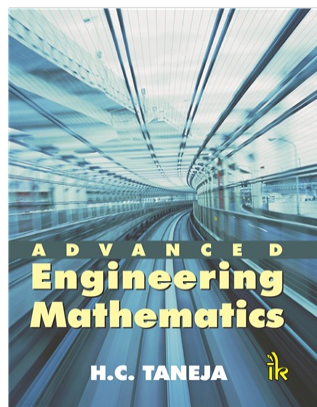


**Advanced Engineering Mathematics , 1/e**

H C Taneja



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**About the Book**

The text broadly divided in seven sections contains 26 chapters. The text covers topics on solid geometry, infinite series, differential and integral calculus, matrices, vector calculus, ordinary differential equations, special functions and Laplace transforms, complex analysis, Fourier analysis, partial differential equations, statistics, numerical methods and linear programming.

The self-contained text has numerous distinguishing features over the already existing books on the same topic. The chapters have been planned to create interest among the readers to study and apply the mathematical tools. The subject has been presented in a very lucid and precise manner with a wide variety of solved examples and exercises, which would eventually help the reader for hassle-free study. The book can be used as a text for Engineering Mathematics course at various levels.

**Salient Features**

- ▶ Contents divided into eight major parts, namely, Vector Algebra and Matrices, Differential and Integral Calculus, Vector Calculus, Ordinary Differential Equations and Laplace Transforms, Fourier Analysis and Partial Differential Equations, Complex Analysis, Numerical Methods, and Statistical Methods and Linear Programming.
- ▶ Presents 1114 solved problems in step-wise manner to understand applications of the mathematical tools.
- ▶ Contains end-of-topic exercises (2160 exercise questions in total) for an extensive practice of each topic. Answers are provided for numerical problems.
- ▶ Gives detailed proofs of all important theorems and derivations of results/relationships.
- ▶ Has five useful appendices at the end of the book.

**Table of Contents**

- ▶ Solid Geometry
- ▶ Matrices, Determinants and Eigenvalue Problems
- ▶ Infinite Series
- ▶ Differentiation and Its Applications
- ▶ Partial Differentiation and Its Applications
- ▶ Definite Integrals and Their Applications
- ▶ Multiple Integrals and Their Applications
- ▶ Vector Differential Calculus
- ▶ Vector Integral Calculus
- ▶ First Order Ordinary Differential Equations
- ▶ Second and Higher Order Linear Differential Equations
- ▶ Series Solutions of Differential Equations and Special Functions
- ▶ Laplace Transforms
- ▶ Fourier Series
- ▶ Fourier Integrals and Fourier Transforms
- ▶ Partial Differential Equations
- ▶ Applications of Partial Differential Equations
- ▶ Functions of a Complex Variable. Analytic Functions
- ▶ Complex Integration
- ▶ Numerical Methods in General
- ▶ Numerical Methods for Differential Equations
- ▶ Linear Difference Equations and Z-Transforms
- ▶ Descriptive Statistics, Probability and Distributions
- ▶ Sampling Distributions and Hypothesis Testing

### About the Author

**H C Taneja** :- H.C. Taneja is Professor and Head, Department of Applied Mathematics, Delhi Technological University, New Delhi. He has vast experience of teaching both mathematics and statistics at UG and PG level to science & engineering students. He has published a number of research papers in journals of international repute, and also has authored a textbook Statistical Methods for Engineering Students. His research interests include Information Theory, Univalent Functions and Applications of Stochastic Processes.

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### Book Review

**Asawari Joshi** :- This book has taken the fear of math out of me. I am extremely confident of taking my semester after studying with this book. My seniors recommended this so I am thankful to them as well as Prof Taneja for writing such a nice book.

**Manasvi Patel** :- To get the best out of the book look at the solved problems. Practice them on your own. The exercises will be very accessible. It helped me a lot. Best book around!

**Mansi Shah** :- The lucid treatment of the Fourier analysis and partial differential equations is something that made me choose this book over 100s of other books.

**Priya Rastogi** :- The book deals with all the important topics of the subject but the inclusion of detailed proofs of all the theorems is an added bonus for all.

**Rachel Taneja** :- Very meticulously solved problems. Has helped me tremendously. A must buy if you are looking for a book for practice.

**Shweta Agarwal** :- Stands out for the sheer number of solved examples. The numerical methods portion is excellent particularly. Highly recommend.

**Trupti Rastogi** :- The further explanation of the topics in the appendices has been very useful for me.

**Vinti Bawa** :- Solved examples are helpful for preparing for my semester exam. Every topic is followed by solved example rather than waiting for the chapter to end. This is extremely helpful.