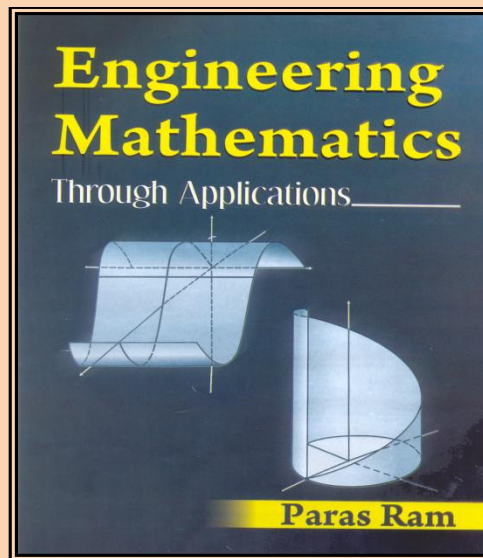


ENGINEERING MATHEMATICS THROUGH APPLICATIONS

PARAS RAM



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THE BOOK

Engineering Mathematics through applications is designed to serve as a core text in first three semesters for undergraduate students of all branches of engineering of various Indian universities including NIT's and State Engineering Colleges. It presents the topic of Algebra and Calculus with applications including the Matrices, Complex Numbers and Multiple Integrals; Ordinary and Partial Differential Equations with applications, Laplace transforms; Numerical Methods with applications.

SALIENT FEATURES OF THE BOOK

- ❖ This book meets the aims and objectives of learning this important subject of mathematics in BTech program.
- ❖ Core concepts are presented through a large number of solved graded model problems (around 750) followed by typical examples in an innovative and lucid manner.
- ❖ Use of language has been kept in minimum. An attempt has been made to explain the subject through maximum use of geometries, wherever possible. All formulae involved in the chapters are given in the tabular form.
- ❖ Reasonably good numbers of relatively easy problems (around 500) are given under assignments and MCQ's in each chapter for practice purpose.
- ❖ Stereotype questions have been avoided and a mention is made about the questions which came during last five years in various technical universities and NIT's during last five years.
- ❖ The text has been supplemented through 'Notes', 'Observations' and 'Remarks', to clarify the principality of the subject.

With these exclusive features, this would serve as a preferred student friendly text book in comparison to the other available books on Engineering Mathematics.

THE AUTHOR

Dr. Paras Ram is Associate Professor and Head, Department of Mathematics, National Institute of Technology, Kurukshetra. He has 16 years of experience in teaching and research and has frequently been associated with several reputed technical universities and institutes for curriculum design and setting of question paper in mathematics for BTech programs. As a resource person, he has participated in large number of teaching and research programs organized by various universities. Besides, he has published many research papers in national/international journals and presented papers at conferences.

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1. Matrices and Their Applications
2. Geometrical Applications of Differentiation
3. Geometrical Applications of Intergration
(quadrature, rectification, volumes and surfaces of revolution)
4. Partial Differentiation and Their Applications
(functions of two or more variables)
5. Multiple Integrals and Their Applications
6. Complex: Numbers and Functions
7. Vector Calculus with Applications
8. Ordinary Differential Equations of First Order
9. Applications of First Order Differential Equations
10. Linear Differential Equations of Second and Higher Order
11. Applications of Linear Differential Equations
12. Partial Differential Equations
13. Laplace Transforms and Their Applications
14. Finite Difference and Interpolation, Numerical Differentiation and Integration
15. Difference Equations with Applications
16. Solutions of Algebraic and Transcendental Equations

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