

# Engineering Mathematics –III

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## Preface

This book mainly designed to serve as text for the Second year Engineering students of Dr. A.P.J. Abdul Kalam Technical University, Lucknow U.P. for Engineering Mathematics-III (Integral Transforms & Discrete Mathematics).

Since it deals with fundamental topics exhaustively, it can be used by Engineering students all over.

We, the authors, through our teaching experience and interactions with various categories of students have tried to make this book simple and easy to follow and to grasp the subject matter. To over come the fear of Mathematics.

This book presents a relation of topics from, Integral transforms (i.e. Laplace Transforms and Fourier Transforms), Set theory, Relations and Functions, Counting techniques, Logic and Algebraic structures (i.e. Group, Ring and Field), Lattices and Boolean Algebra, which are useful students of Science & Technology. The primary purpose of this book have insights into above topics. Detailed explanations have been given where the students have usually been found to stumble due to lack of clear concepts.

This textbook covers syllabus for course in Mathematics III (Integral Transforms & Discrete Mathematics) in third semester for B.Tech programme of Dr. A.P.J. Abdul Kalam Technical University, Lucknow U.P. The basic theories are dealt by simple procedures and problems are given step-by-step reasoning.

This book is written kepping in mind that almost all of the Engineering subject need a through understanding of Mathematics and we have enough examples and applications to support them.

## Acknowledgement

We are thankful to help and encouragement from my father Dr. Rajendra Singh D.A.V. (P.G.) College, Kanpur and mother Late Smt. Shivwati Devi. At last I sincerely record great assistance which I received from my wife Smt. Nidhi Singh. Several time she missed me at the time of need and pursued the house hold work alone. I express my affection to my sons Darsh and Divit who too missed me on several occasions and adjusted with their mother.

I wish to express my deep sense of appreciation and gratitude to, Dr. P. K. Tripathi, Reader in Mathematics, D.A.V. (P.G.) College, Kanpur and Retd. Prof. A. P. Dwivedi, H.B.T.I, Kanpur, for this constant encouragement, valuable guidance and inspiring discussions throughout the inception, execution and completion of this book. He has been very kind and helpful to me during whole of my academic life. I will fail in my duty if I do not acknowledge Co-operation, help and encouragement from my father Shri Shyam Shankar Tripathi and mother Late Smt. Anandi Devi Tripathi and my close friend Prof. C. K. Dixit, Dean & Head of Dept. of Science, Dr. Shakuntala Misra National Rehabilitation University. At last I sincerely record great assistance which I received from my wife Smt. Roopal Tripathi. Several time she missed me at the time of need and pursued the house hold work alone. I express my affection to my sons Ayush and Krishna who too missed me on several occasions and adjusted with their mother.

Any suggestions from the students and our fellow teachers will help us refine the book and are most welcome.

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