Advanced Calculus and Numerical Methods

For VTU Second Sem. B.E. Course

As per New Syllabus

$$\begin{cases} x_1 + x_2 - 3x_3 = -10 \\ 6x_2 - 2x_3 + x_4 = 7 \\ 2x_3 - 3x_4 = 13 \end{cases}$$

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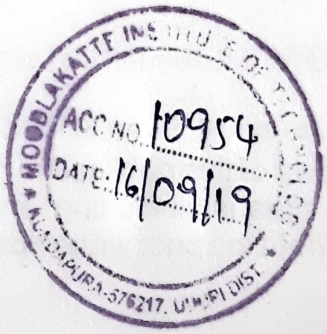

Bhagyalakshmi Adiga

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ADVANCED CALCULUS and NUMERICAL METHODS

(As Per New Syllabus of VTU w.e.f. 2018-19 for 2nd Semester B.E. Course)

BHAGYALAKSHMI KARANTH (ADIGA)

M.Sc., M. Tech. in MATHEMATICS
Asst. Professor, Department of Mathematics,
MOODLAKATTE INSTITUTE OF TECHNOLOGY, KUNDAPURA

(e-mail: bhagyakaranth@gmail.com)

Dedicated to

GOD,

My Beloved Family,
(Barkur Ramesh Adiga and Kaikere Sooryanarayana Karanth)

Mr. Varun Kumar Bhat & Mr. Balanageshwara S.,

Mrs. Pushpa Ramesh Sukthankar,
(Retd. Professor of Mathematics, Sahyadri Science College, Shimoga)

And

Students

Preface

This book is prepared in accordance with VTU new syllabus under Choice Based Credit System (CBCS) Scheme for the 2nd Semester B.E. Course.

A big Thank you to all of you for your overwhelming response to my first book on "Understanding Calculus & Differential Equations" for the students of 1st Semester B.E. course and I'm delighted to write this book on "Advanced Calculus and Numerical Methods".

The objective of this book is to familiarize with the important tools of "Advanced Calculus and Numerical Methods" that are essential for the students of all the branches of Engineering.

The subject matter in this book has been explained in a simple language and includes multiple varieties of examples from old question papers of VTU. Emphasis has been laid to present the basic concepts, facts, terms, principles, equations and on their applications in a coherent, user friendly manner.

This book is my sincere attempt to provide you with the meaningful insight about the subject along with tips and tricks to demystify your difficulties to ensure you will enjoy solving advanced calculus problems using numerical methods.