

Preface

Upon requests from colleges in Kerala, India, the Centre for Mathematical and Statistical Sciences (CMSS) had decided to conduct a series of remedial courses on selected topics. These topics were suggested by the college teachers themselves so that by participating in these courses they could be better prepared to teach the material in their classes. A series of such courses were conducted by CMSS from 1985 to 2002 at its Trivandrum Campus, Kerala, India. The notes written up for such courses and then class-tested at the University of Texas at El Paso, USA, formed Modules 1, 2, 3.

Modules Series of CMSS are meant for self-study. On selected basic topics in mathematical sciences, materials are developed with a lot of illustrative examples, starting from the fundamentals. Examples are taken from real-life situations so that the students can see the relevance of mathematics in solving real-life problems. The subject matter is developed very slowly so that there is time for absorbing the materials.

Modules 1, 2, 3 are on vectors, matrices, determinants and their applications. Module 4 is on limits, continuity, differentiability and differential calculus. Module 5 is on integrals and integration. Module 6 is on basic probability and random variables. This is Chapters 1 to 9 of the materials on basic probability and statistics. Module 7 is on statistics. Module 8 is on stochastic processes. Module 9 is about questions and answers, mainly the questions asked by the students over past years and their answers. Modules 1 to 9 are expected to cover the basic materials needed for a proper study of their own subjects for students from statistics, physics, engineering areas and other applied areas. This present material is a combined version of Modules 6, 7 and 9.

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