CALCULUS FOR ECONOMICS, COMMERCE AND MANAGEMENT

PROF. INDER KUMAR RANA
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IIT Bombay

PRE-REQUISITES : Basic School Mathematics

INTENDED AUDIENCE : Students, PhD scholars, teachers, industry

COURSE OUTLINE :
This course is based on the course"mathematics for Economics, Commerce and Management", which was run at IITB for 8 years. Mathematical tools give a precise way of formulating and analyzing a problem and to make logical conclusions. Knowledge of mathematical concepts and tools have have become necessary for students aspiring for higher studies and career in any branch of Economics, Commerce and Management. Math for ECM aims to strengthen the mathematical foundations of students of Economics, Commerce, and Management. Professionals working in these field, wishing to upgrade their knowledge, will also benefit. The stress of the course will be on building the concepts and their applications. The main topic will be Calculus and its applications.

ABOUT INSTRUCTOR :
Prof. Inder K. Rana presently is an Emeritus Fellow at Department of mathematics, IIT Bombay. He has an experience of 36 years of teaching mathematics courses to undergraduate (B. Tech) and master's M.Sc. students at IIT Bombay. He has authored 4 books,namely,"Introduction to measure and Integration" American Mathematical Society, Graduate Studies in Mathematics Volume 45, 2000,"From Numbers to Analysis" World Scientific Press, 1998 ,Calculus @IITB: Concepts and Examples, math4all, India, 2007 "From Geometry to Algebra: A course in Linear Algebra" math4all, India, 2007.He has won three awards,"C. L. Chandna Mathematics Award" for the year 2000 in recognition of distinguished and outstanding contributions to mathematics research and teaching. The award is given by 'SaraswatiVishvas Canada","Excellence in Teaching" award for the year 2004 Awarded by IIT Bombay, based on the evaluations by students."Aryabhata Award" 2012 All India Ramanujan Math Club, India, for teaching and work towards math education in India.

COURSE PLAN :

Week 1**:** Revision of basic conceps from Mathematical finance

Week 2**:** Basic set heory and concept of functions

Week 3**:** Limits and Continuity of a function of one variable and its applications

Week 4**:** Derivative and tools to compute

Week 5**:** Application of derivatives in increasing/decreasing

Week 6**:** Application of derivetives in optimization

Week 7**:** Functions of several variables

Week 8**:** Applications