COURSE OUTLINE

This course provides the minimum mathematical requirements to study mathematical finance or more precisely the pricing of financial derivatives.

COURSE DETAIL

<table>
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<th>Week</th>
<th>Topics</th>
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| 1.   | Fundamentals of Interest Rate  
      | Fixed income securities  
      | Term structure of Interest rate-I  
      | Term structure of Interest rate-II  
      | Optimization problems in Finance |
| 2.   | Crash course on Karush-Kuhn-Tucker Conditions  
      | Mean Variance Portfolio Optimization  
      | Marketing Model & Related Issues  
      | The Capital Asset Pricing Model-I  
      | The Capital Asset Pricing Model-II |
      | Binomial Trees and Arbitrage  
      | Pricing Options using Binomial Trees-I  
      | Pricing Options using Binomial Trees-II  
      | Girsanov's Theorem |
| 4.   | Black Scholes Formula:The Risk Neutral Approach  
      | More on Black Scholes Formula  
      | Dividend Paying Stocks  
      | Pricing Forwards & Futures-I  
      | Pricing Forwards & Futures-II |

References:

NPTEL Syllabus

NOC: Probability and Stochastic for Finance II - Video course

Pre-requisites:
Mathematics should be at least a course among the minor subjects.

Coordinators:
Dr. Joydeep Dutta  
Department of Humanities and Social Sciences
IIT Kanpur