BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE-PILANI, HYDERABAD
INSTRUCTION DIVISION
FIRST SEMESTER : 2016-17
Course Handout Part II

Date: 01/08/2016

In addition to part -I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

Course No. : **ECON F213**
Course Title : **Mathematical and Statistical Methods**
Instructor-in-Charge : **Rishi Kumar**
Instructor : **Rishi Kumar**

1. Scope and Objective:

This course concentrates on review of the mathematical fundamentals, statistical methods and techniques necessary for quantitative economics and finance. The course is designed to give emphasis on the application of real life examples on various fundamental issues of economics and finance.

2. Text Book:

1. Lind A Douglas, Marchal G William & Wathen A Samuel, "Statistical Techniques in Business and Economics" 13th Edition, 2008

3. Reference Books:

R1. Stine E. Robert and Foster Dean, "Statistics for Business", Pearson Education, 1st Edition, 2011
R2. Yamane Taro, Mathematics for Economists, Eastern Economy Edition, 2nd Edition 1985
R3. Alpha Chiang and Kelvin Wainwright, “Fundamental methods of Mathematical Economics”, TMH, 4th Ed., 2005

4. Course Plan:

Lec. No.	Learning Objective	Topics to be covered	References (TB)
1	Exposure to Basics of Statistics	What is Statistics?	Chapter 1 (TB)
2 - 5	Data Classifications, Tabulation and Presentation	Describing Data: Frequency tables, frequency distributions and Graphic Presentations, numerical measures.	Chapter 2, 3 and 4(TB)
6-8	Description of Data & Exploring Data	Concept of Skewness, Moments and Kurtosis	Chapter 4 (TB)
9 -12	Exposure to Probability Distributions	Binomial, Poisson & Normal	Chapter 6 and

		Distributions	7 (TB)
13 - 15	Sampling Techniques	Sampling Methods and the Central limit theorem	Chapter 8(TB)
16 - 18	Statistical Inference: Estimation	Estimation and Confidence intervals	Chapter 9(TB)
19-24	Statistical Inference :Hypothesis testing	One and two sample test of Hypothesis	Chapter 10 and 11 (TB)
25	Concept of variance	Analysis of variance	Chapter 12 (TB)
26 - 28	Correlation and regression analysis	Linear regression and correlation	Chapter 13 (TB)
29- 32	Some non-parametric tests: chi-square, Z, student's - t, and F-distributions	Non parametric methods	Chapter 10(TB) and Class notes
33-36	Theory of index numbers, weighted and unweighted indexes	Index Numbers	Chapter 15 (TB)
37-40	Time series Analysis	Time series and Forecasting	Chapter 16 (TB)
41 -45	Application of Mathematical concepts in Economics and Finance	Functions, Derivatives and Differentiations, Logarithms and exponents, Differentiation and integration, Dynamic and static analysis.	Class Notes.

5. Evaluation Scheme:

EC No.	Components	Duration	Weight age (%)	Date, Time & Venue	Nature of Component
1.	Test-I	1 Hour	20	13/9, 4.00--5.00 PM	CB
2.	Test-II	1 Hour	20	21/10, 4.00--5.00 PM	OB
3.	Home Assignments		20		Presentation/Written Assignment
4.	Comprehensive Exam	3 hrs	40	13/12 FN	CB

6. Chamber Consultation Hour: Wednesday (3 pm – 4 pm).

7. Notice: All notices pertaining to this course shall be displayed on the **Economics and Finance (or) LTC Notice Board.**

8. Make-up policy: Make-up will be granted on genuine reason with prior permission. No Make-up will be granted through SMS.

Instructor-In-Charge
ECON F213