**Statistics-II**

**BS-Economics-5th**

**UNIT ONE: Descriptive Statistics**

1. Introduction & Motivation

2. Index Numbers – Laspayres & Paasche

3. Sorting, Ranking and Percentiles.

4. Representative Measures: Mean, Median, Mode

5. Measuring Variation:Interquartile Range (IQR) and Standard Deviation.

6. Data Summaries: the Boxplot.

7. Histograms.

8. Data Density estimates.

9. Picturing Bivariate Relationships.

**UNIT TWO: Random Samples**

10. Random Draws from Populations

11. Random Variables

12. Probability Laws: Additive and Multiplicative

13. Binomially Distributed Random Variables

14. Expected Values, Averages, and Law of Large Numbers

15. Central Values and Unexpected Values.

16. Approximations of Binomial by Normal Distribution

17. Central Limit Theorem: Approximating Sums by Normals

18. Assessing Independence in Contingency Tables.

1. Causality via Experimental Data – Ch. 1

2. Causality via Observational Data – Ch. 2

3. Review of Histograms & Density Estimates. – Ch. 3 & Lec 7 & 8 from

Stats I above.

4. Normal Approximation. Ch. 5.

5. Measurement Error. Ch. 6

6. Correlations: Basic Ideas, Ch. 8

7. Correlations: Complexities Ch. 9

8. Regressions: Basics. Ch. 10

9. Regressions: Complications, Ch. 11, 12, and additional materials

10. Review of Central Limit Theorem & Random Sampling. Ch. 16 & 21.

11. Sample Surveys: Ch. 19

12. Gallup Poll – Ch. 20, 21

13. Survey of Employment & Unemployment – Ch. 22

14. Hypothesis Tests – Ch. 24, 25, 26

15. Tests for Independence – Ch. 28

16. Applications to Real Data Sets.