OPEN COURSES

1. STA5D 01: ECONOMIC STATISTICS

Module 1: Time series analysis: Economic time series, different components, illustrations, additive and multiplicative models, determination of trends, growth curves, analysis of seasonal fluctuations, construction of seasonal indices 24 hours

Module 2: Index numbers: Meaning and definition-uses and types-problems in the construction of index numbers-simple aggregate and weighted aggregate index numbers. Test for consistency of index numbers-factor reversal , time reversal and unit test, Chain base index numbers-Base shifting-splicing and deflating of index numbers. Consumer price index numbers-family budget enquiry-limitations of index numbers. 30 hours

Books for references
1. S C Gupta and V K Kapoor, Fundamentals of Applied Statistics, Sulthan Chands and sons
2. Goon A M, Gupta M K and Das Gupta, Fundamentals of Statistics Vol II, The World Press, Calcutta

2. STA5D 02: QUALITY CONTROL

Module 1: General theory of control charts, causes of variations in quality, control limits, sub-grouping, summary of out-of-control criteria, charts of ttributes, np chart, p chart, c chart, Charts of variables: X bar chart, R Chart and sigma chart, Revised control charts, applications and advantages 30 hours

Module 2: Principles of acceptance sampling-problems of lot acceptance, stipulation of good and bad lots-producer' and consumer' risk, simple and double sampling plans, their OC functions, concepts of AQL, LTPD,AOQL, Average amount of inspection and ASN function 24 hours

References
1. Grant E L, Statistical quality control, McGraw Hill
2. Duncan A J, Quality Control and Industrial Statistics, Taraporewala and sons
3. Montegomery D C, Introduction to Statistical Quality Control, John Wiley and son

3. STA5D 03: BASIC STATISTICS

Module 1: Elements of Sample Survey: Census and Sampling, advantages, principal step in sample survey-sampling and non-sampling errors. Probability sampling, judgment sampling and simple random sampling. 10 hours

Module 2: Measures of Central tendency: Mean, median and mode and their empirical relationships ; Measures of Dispersion: absolute and relative measures, standard deviation and coefficient of variation. 12 hours

Module 3: Fundamental characteristics of bivariate data: univariate and bivariate data, scatter diagram, Pearson's correlation coefficient, limit of correlation coefficient. Curve fitting, principle of least squares, fitting of straight line. 15 hours

Module 4 : Basic probability: Random experiment, sample space, event, algebra of events, Statistical regularity, frequency definition, classical definition and axiomatic definition of probability-addition theorem, conditional probability, multiplication theorem and independence of events (limited to three events). 17 hours

References
1. V. K. Rohatgi, An Introduction to Probability Theory and Mathematical Statistics, Wiley Eastern.
2. S.C.Gupta and V. K. Kapoor, Fundamentals of Mathematical Statistics, Sultan Chand and Sons
3. A.M. Mood, F.A. Graybill and D C Bose, Introduction to Theory of Statistics, McGraw Hill
4. John E Freund, Mathematical Statistics (6th edn), Pearson Edn, New Delhi