1 Testing of Hypothesis:  
Parameter and statistics, Sampling distribution, standard error of a statistics, statistical hypothesis, null hypothesis, Alternative Hypothesis, testing of hypothesis, Test of significance, Level of significance, Degrees of freedom, Critical region, Type I and type II errors.

2 Large sample test:  
Test for variables: test of significance of mean, Test of significance of difference between two means and two standard deviations. Test for attributes: Test of significance of a proportions of success and Test of significance of the difference between two proportion.

3 Small sample test:  
Chi-square test, t-test and F-test with simple examples.

4 Statistical Quality Control (S.Q.C.)  
Meaning and scope of S.Q.C., Organization of S.Q.C. in an industry unit, Control charts-3 sigma limits and control limits, Control charts for variables x and R charts, their uses and interpretation, Use of theory of runs. Control charts for attributes: p, np and c charts.

Reference Books:
(3) Grant E.L.:Statistical quality control,McGraw Hill.
To be effective from 2016-2017  
REVISED SYLLABUS  B.A. SEMESTER-4  
STATISTICS ELECTIVE -- 212 (PAPER-4)  
ORPERATIONS RESEARCH  

1 Linear Programming  
(25%)  

2 Transportation Problem:  
(25%)  
Transportation problem: North-west corner rule and matrix minima methods and Vogle’s Approximation method.  

3 Assignment problem and Replacement Problem:  
(25%)  
Definition of balanced Assignment problem, Hungarian method of solving an Assignment problem. Meaning of Replacement Problem, simple examples of Replacement Problem when the units are deteriorating with time and the value of money remains unchanged.  

4 Decision Theory:  
(25%)  
Ingredients of decision problems : Act, states of nature of events, pay off Matrix, Different methods of Decision making, Maxi-min principle, Maxi-max principle, Lalplace principle, Horwich principle and Expected monetary value(EMV).  

Reference Books:  
(1) J.K.Sharma : O.R. Theory and application” Macmillan India Ltd.  
(2) H.A.Taha: O.R. Theory” Macmillan India Ltd.  
(3) D.C.Sancheti&V.K.Kapoor: Statistics Theory, Methods & Application Sultan Chand & Sons