

**LESSON PLAN FOR EVEN SEM**  
**SESSION 2017-18**

**NAME OF ASSISTANT /ASSOCIATE PROFESSOR : DR. MAMTA OBEROI**  
**CLASS/SECTION : B.A/ B. SC-II Semester-IV**  
**SUBJECT : STATISTICS**

<b>PAPER : - Parametric and Non-parametric tests</b>		
<b>UNIT/PART I</b>	<b>TOPIC : Chi-square distribution</b>	
	<b>THEORY</b>	<b>PRACTICAL</b>
DAY1 DATE 1-1-18	Definition and derivation of Chi-square distribution	-----
DAY2 DATE 2-1-18	Moment generating function	-----
DAY3 DATE 3-1-18	Cumulant generating function	Practical based on Chi-square distribution to G-II students
<b>Paper : Design of Experiment Chapter : Analysis of variance (ANOVA)</b>		
DAY4 DATE 4-1-18	Definition and assumptions for ANOVA	Practical based on Chi-square distribution to G-II students
DAY5 DATE 5-1-18	Analysis of variance for one-way classification for fixed effect models with one observation per cell	-----
DAY6 DATE 6-1-18	Statistical Analysis of variance for one-way classification for fixed effect models with one observation per cell	-----
DAY7 DATE 8-1-18	Analysis of variance for two-way classifications for fixed effect models with one observation per cell.	-----
DAY8 DATE 9-1-18	Statistical Analysis of variance for two-way classifications for fixed effect models with one observation per cell	-----
DAY9 DATE 10-1-18	Numericals based on two way classification model	Practical based on one way classification model to G-II students
DAY10 DATE 11-1-18	Numericals based on one way classification model	Practical based on two way classification model to G-II students
DAY11 DATE 12-1-18	Comparison of one way classification model and two way classification model	-----
DAY12 DATE 13-1-18	Expectation and variance calculations for one way classification model	-----
DAY13 DATE 15-1-18	Expectation and variance calculations for two way classification model	-----
<b>PAPER : Parametric and Non-parametric tests and Topic : Chi-square distribution</b>		
DAY 14	Skewness of Chi-square distribution	-----

DATE 16-1-18		
DAY15 DATE 17-1-18	Mean and mode of Chi-square distribution	Practical based on Chi-square distribution to G-II students
DAY16 DATE 18-1-18	Additive property of Chi-square distribution	Practical based on Chi-square distribution to G-II students
DAY17 DATE 19-1-18	Conditions for the validity of Chi-square distribution	-----
DAY18 DATE 20-1-18	Chi-square test for goodness of fit	-----
DAY19 DATE 22-1-18	<b>HOLIDAY</b>	-----
DAY20 DATE 23-1-18	<b>SPORTS DAY</b>	-----
DAY21 DATE 24-1-18	<b>HOLIDAY</b>	-----
DAY22 DATE 25-1-18	Contingency table and Coefficient of contingency	Practical based on Chi-square distribution to G-II students
DAY23 DATE 26-1-18	<b>HOLIDAY</b>	-----
DAY 24 DATE 27-1-18	test of independence of attributes in a contingency table	-----
<b>UNIT/PART II</b>	<b>Paper : Parametric and Non-parametric tests</b>	
	<b>TOPIC : Student's 't' and Snedecor's 'F' statistics</b>	
	<b>THEORY</b>	<b>PRACTICAL</b>
DAY1 DATE 29-1-18	Definition and derivation of Student's 't'	-----
DAY2 DATE 30-1-18	Constants of t-distribution	-----
DAY3 DATE 31-1-18	<b>HOLIDAY</b>	----
DAY4 DATE 1-2-18	limiting form of t-distribution	Practical based on 't'-test to G-II students
DAY5 DATE 2-2-18	Definition of Snedcor's F-distribution	-----
DAY6 DATE 3-2-18	Derivation of Snedcor's F-distribution	----
DAY7 DATE 5-2-18	Constants of F-distribution	----
DAY8 DATE 6-2-18	Mode of F-distribution	-----
DAY9 DATE 7-2-18	Relationship between t, f and chi-square distribution	Practical based on 'F'-test to G-II students
DAY10 DATE 8-2-18	Examples based on 't' test	Practical based on 'F'-test to G-II students
DAY11 DATE 9-2-18	<b>ASSIGNMENT 1 : BASED ON T AND F TEST, Examples based on 't' test</b>	-----

DAY12 DATE 10-2-18	<b>HOLIDAY</b>	-----
DAY13 DATE 12-2-18	Examples based on 'F' test	-----
DAY14 DATE 13-2-18	<b>HOLIDAY</b>	-----
DAY15 DATE 14-2-18	Examples based on 'Chi-square' test	Practical based on 't'-test to G-II students
DAY16 DATE 15-2-18	Examples based on 't', 'F' and Chi-square test	Practical based on 't'-test to G-II students
<b>Paper : Design of Experiment Chapter : Introduction to Design of Experiments</b>		
DAY17 DATE 16-2-18	Introduction to design of experiments, terminology: experiment	-----
DAY18 DATE 17-2-18	Treatment, Experimental Unit	-----
DAY19 DATE 19-2-18	Blocks, experimental error	-----
DAY20 DATE 20-2-18	Replication, precision, efficiency of a design	-----
DAY21 DATE 21-2-18	Need for design of experiments	Practical based on Chi-square distribution to G-II students
DAY22 DATE 22-2-18	Size and shape of plots and blocks	Practical based on 'F' to G-II students
DAY23 DATE 23-2-18	Fundamental principles of design: randomization, replication and local control	-----
<b>UNIT/PART III</b>	<b>TOPIC : Parametric and Non-parametric tests</b>	
	<b>THEORY</b>	<b>PRACTICAL</b>
DAY1 DATE 24-2-18	Testing for the mean and variance of univariate normal distribution	-----
DAY2 DATE 26-2-18	testing of equality of two means of two univariate normal distributions	-----
DAY3 DATE 27-2-18	<b>TEST &amp; SEMINAR : BASED ON 'T', 'F' AND CHI-SQUARE TEST</b>	-----
DAY4 DATE 28-2-18	<b>HOLIDAY</b>	-----
DAY5 DATE 1-3-18	<b>HOLIDAY</b>	-----
DAY6 DATE 2-3-18	<b>HOLIDAY</b>	-----
DAY7 DATE 3-3-18	<b>HOLIDAY</b>	-----
DAY8 DATE 5-3-18	Testing of equality of two variances of two univariate normal distributions	-----

DAY9 DATE 6-3-18	Testing for the significance of sample correlation coefficient in sampling from bivariate normal distribution	----
DAY10 DATE 7-3-18	Testing of Equality of two variances	Practical based on Testing of Equality of two variances
DAY11 DATE 8-3-18	Testing of Equality of two means	Practical based on Testing of Equality of two means
DAY12 DATE 9-3-18	Examples based on sample correlation coefficient in sampling from bivariate normal distribution	-----
DAY13 DATE 10-3-18	<b>ASSIGNMENT 2</b> : Testing of Equality of two variances and Testing of Equality of two means	-----
<b>Paper : Design of Experiment Chapter : CRD and RBD Design</b>		
DAY 14 DATE 12-3-18	Completely randomized design (CRD)-its layout	-----
DAY15 DATE 13-3-18	applications, advantages and disadvantages	-----
DAY16 DATE 14-3-18	Statistical Analysis of CRD	Practical based on sample correlation coefficient in sampling from bivariate normal distribution
DAY17 DATE 15-3-18	Examples Related to CRD	Practical based on Testing for the mean & Varof normal dist.
DAY18 DATE 16-3-18	Randomized Block Design (RBD), their layout	-----
DAY19 DATE 17-3-18	applications, advantages and disadvantages	-----
DAY20 DATE 19-3-18	Statistical Analysis of RBD	-----
DAY21 DATE 20-3-18	Examples Related to RBD	-----
DAY22 DATE 21-3-18	<b>CONDITIONAL TEST BASED ON DESIGN OF EXPERIMENS</b>	Practical based on CRD
DAY23 DATE 22-3-18	<b>CONDITIONAL TEST BASED ON DESIGN OF EXPERIMENS</b>	Practical based on RBD
DAY 24 DATE 23-3-18	<b>HOLIDAY</b>	-----
DAY 25 DATE 24-3-18	Efficiency of RBD relative to CRD	-----
<b>UNIT/PART IV</b>	<b>Paper : Parametric and Non-parametric tests \\\TOPIC :</b>	
	<b>THEORY</b>	<b>PRACTICAL</b>
DAY1 DATE 26-3-18	Difference between parametric and non-parametric Tests	-----

DAY2 DATE 27-3-18	Definition of order statistics	-----
DAY3 DATE 28-3-18	Sign test for univariate and bivariate distribution	Practical based on LSD
DAY4 DATE 29-3-18	<b>HOLIDAY</b>	-----
DAY5 DATE 30-3-18	Run test with examples	-----
DAY6 DATE 31-3-18	Median test with examples	-----
DAY7 DATE 2-4-18	Kolmogorov-Smirnov one sample test	----
DAY8 DATE 3-4-18	Kolmogorov-Smirnov two sample test	----
DAY9 DATE 4-4-18	Mann Whitney U-test	Practical based on Sign test for univariate and bivariate dist.
DAY10 DATE 5-4-18	Examples of Mann Whitney U-test	Practical based on run test
DAY11 DATE 6-4-18	Examples Related to all non-parametric tests	-----
<b>Paper : Design of Experiments    Topic : Latin square design (LSD)</b>		
DAY12 DATE 7-4-18	Latin square design (LSD): Introduction and its Layout	-----
DAY13 DATE 9-4-18	statistical analysis of LSD	-----
DAY14 DATE 10-4-18	Applications of LSD	-----
DAY15 DATE 11-4-18	merits and demerits of LSD	Practical based on median test
DAY16 DATE 12-4-18	Factorial designs	Practical based on Mann Whitney U-test
DAY17 DATE 13-4-18	Definition, advantages and disadvantages of Factorial designs	----
DAY18 DATE 14-4-18	<b>HOLIDAY</b>	-----
DAY19 DATE 16-4-18	Examples based on Factorial designs	-----
DAY20 DATE 17-4-18	Examples based on LSD	-----
DAY21 DATE 18-4-18	<b>HOLIDAY</b>	-----
DAY22 DATE 19-4-18	Comparison of CRD, RBD and LSD	Practical based on Kolmogorov-Smirnov test
DAY23 DATE 20-4-18	Examples based on CRD,RBD and LSD	-----

**NAME OF ASSISTANT /ASSOCIATE PROFESSOR : DR. MAMTA OBEROI**  
**CLASS/SECTION : B.A/ B.SC-III Semester-VI**  
**SUBJECT : STATISTICS**

<b>OPERATIONS RESEARCH</b>		
<b>UNIT/PART I</b>	<b>TOPIC : Operations Research</b>	
	<b>THEORY</b>	<b>PRACTICAL</b>
DAY1 DATE 1-1-18	Objective of O.R	Practical based on weighted aggregates method and on simple average of price relatives to G-I(Mon-Tue) and G-III (Fri-Sat)
DAY2 DATE 2-1-18	Nature and definitions of O.R	Practical based on Laspeyre's and Paasche's Index Number to G-I(Mon-Tue) and G-III (Fri-Sat)
DAY3 DATE 3-1-18	Scope of O.R.	-----
DAY4 DATE 8-1-18	Meaning and necessity of O.R. models	Practical based on Fisher's index numbers to G-I &G-III
DAY5 DATE 9-1-18	classification of O.R. models	Practical based on Fisher's index numbers to G-I &G-III
DAY6 DATE 10-1-18	Advantages & disadvantages of O.R. models	-----
DAY7 DATE 15-1-18	Steps in model formulation	Practical based on cost living index numbers to G-I & G-III
DAY 8 DATE 16-1-18	Principles of modeling	Practical based on factor reversal tests to G-I &G-III
DAY9 DATE 17-1-18	Characteristics of a good model and Allocation problems	-----
DAY10 DATE 22-1-18	<b>HOLIDAY</b>	-----
DAY11 DATE 23-1-18	<b>SPORTS DAY</b>	-----
DAY12 DATE 24-1-18	<b>HOLIDAY</b>	-----
<b>UNIT/PART II</b>	<b>TOPIC : Linear programming problem (LPP)</b>	
	<b>THEORY</b>	<b>PRACTICAL</b>
DAY1 DATE 29-1-18	Definition and Introduction of Linear programming problem (LPP)	Practical based on time reversal tests to G-I &G-III
DAY2 DATE 30-1-18	Objective function, constraints and mathematical formulation of LPP	Practical on Base shifting, splicing to G-I& G-III
DAY3 DATE 31-1-18	<b>HOLIDAY</b>	-----

DAY4 DATE 5-2-18	Graphical solution of L.P.P.	Practical on trend line to G-I & G-III
DAY5 DATE 6-2-18	Practical problems of graphical sol. of LPP	Practical on seasonal variations to G-I & G-III
DAY6 DATE 7-2-18	limitations of graphical method	-----
DAY7 DATE 12-2-18	<b>ASSIGNMENT 1 : PROBLEMS RELATED TO GRAPHICAL SOLUTIONS OF LPP</b>	Practical on semi-averages method to G-I & G-III
DAY8 DATE 13-2-18	<b>HOLIDAY</b>	-----
DAY9 DATE 14-2-18	Simplex method to solve L.P.P.	-----
DAY10 DATE 19-2-18	Examples to solve LPP using Simplex method	Practical on method of curve fitting by principle of least to G-I & G-III
DAY11 DATE 20-2-18	Concept of initial basic feasible solution	Practical on moving average method to G-I & G-III
DAY12 DATE 21-2-18	Computation procedure for Simplex Method	-----
<b>UNIT/PART III</b>	<b>TOPIC : Artificial variable techniques</b>	
	<b>THEORY</b>	<b>PRACTICAL</b>
DAY1 DATE 26-2-18	Big-M method	Practical on ratio to trend method to G-I & G-III
DAY2 DATE 27-2-18	<b>TEST &amp; SEMINAR : QUESTIONS BASED ON UNIT I AND UNIT II</b>	Practical on ratio to moving average method to G-I & G-III
DAY3 DATE 28-2-18	<b>HOLIDAY</b>	-----
DAY4 DATE 1-3-18	<b>HOLIDAY</b>	-----
DAY5 DATE 2-3-18	<b>HOLIDAY</b>	-----
DAY6 DATE 3-3-18	<b>HOLIDAY</b>	-----
DAY7 DATE 5-3-18	Two-phase method	Practical on crude death rate to G-I & G-III
DAY8 DATE 6-3-18	Duality in Linear Programming	Practical on general fertility rate to G-I & G-III
DAY9 DATE 7-3-18	Concept of duality with examples	-----
DAY 10 DATE 12-3-18	<b>ASSIGNMENT 2 : ON THE CONCEPT OF LPP</b>	Practical on crude birth rate to G-I & G-III
DAY11 DATE 13-3-18	Fundamental properties of duality	Practical on life tables to G-I & G-III
DAY12 DATE 14-3-18	Examples related to Two-phase method	-----

DAY13 DATE 19-3-18	Examples related to Big-M method	Practical on control charts to G-I & G-III
DAY14 DATE 20-3-18	Examples related to duality problems in LPP	Practical on R-charts to G-I & G-III
DAY15 DATE 21-3-18	<b>CONDITIONAL TEST</b>	-----
DAY16 DATE 22-3-18	<b>CONDITIONAL TEST</b>	-----
DAY 17 DATE 23-3-18	<b>HOLIDAY</b>	-----
<b>UNIT/PART IV</b>	<b>TOPIC : Transportation Problem (T.P.)</b>	
	<b>THEORY</b>	<b>PRACTICAL</b>
DAY1 DATE 26-3-18	Formulation of Transportation Problem (T.P.)	Practical on sampling plans to G-I & G-III
DAY2 DATE 27-3-18	Basic feasible solution and basics concept of T.P.	Practical on demand & supply to G-I & G-III
DAY3 DATE 28-3-18	Different methods to find initial feasible solution with introduction of all	-----
DAY4 DATE 29-3-18	<b>HOLIDAY</b>	-----
DAY5 DATE 2-4-18	North-West corner rule	Practical on Control Charts to G-I & G-III
DAY6 DATE 3-4-18	Row minima method	Practical on Laws of demand and supply to G-I & G-III
DAY7 DATE 4-4-18	Column minima method	-----
DAY8 DATE 9-4-18	Matrix minima method (Least cost entry method)	Practical on time series data to G-I & G-III
DAY9 DATE 10-4-18	Vogel's Approximation method (or Unit cost penalty method)	Practical on Pareto's Law of income dist. to G-I & G-III
DAY10 DATE 11-4-18	UV-method (Modi's method) for finding the optimum solution of T.P	-----
DAY11 DATE 14-4-18	<b>HOLIDAY</b>	-----
DAY12 DATE 16-4-18	UV-method –Practical problems related to this	Practical on c-chart to G-I & G-III
DAY13 DATE 17-4-18	Examples of Vogel's Approximation method	Practical on p-charts to G-I & G-III
DAY14 DATE 18-4-18	<b>HOLIDAY</b>	-----