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## STAT- 211 Statistical Methods

### Theory

Introduction to Statistics and its Applications in Agriculture, Graphical Representation of Data, Measures of Central Tendency & Dispersion, Definition of Probability, Addition and Multiplication Theorem (without proof). Simple Problems Based on Probability. Definition of Correlation, Scatter Diagram. Karl Pearson's Coefficient of Correlation. Linear Regression Equations. Introduction to Test of Significance, One sample & two sample test t for Means, Chi-Square Test of Independence of Attributes in  $2 \times 2$  Contingency Table. Introduction to Sampling Methods, Sampling versus Complete Enumeration, Simple Random Sampling with and without replacement, Use of Random Number Tables for selection of Simple Random Sample.

### Practical

Graphical Representation of Data. Measures of Central Tendency (Ungrouped data) with Calculation of Quartiles, Deciles & Percentiles. Measures of Central Tendency (Grouped data) with Calculation of Quartiles, Deciles & Percentiles. Measures of Dispersion (Ungrouped Data). Measures of Dispersion (Grouped Data). Moments, Measures of Skewness & Kurtosis (Ungrouped Data). Moments, Measures of Skewness & Kurtosis (Grouped Data). Correlation & Regression Analysis. Application of One Sample t-test. Application of Two Sample Fisher's t- test. Chi-Square test of Goodness of Fit. Chi-Square test of Independence of Attributes for  $2 \times 2$  contingency table. Selection of random sample using Simple Random Sampling.

### Lecture Schedule: Theory

S. N.	Topic	No. of lectures
1.	Introduction to Statistics and its Applications in Agriculture,	1
2.	Graphical Representation of Data, Measures of Central Tendency & Dispersion,	1
3.	Definition of Probability, Addition and Multiplication Theorem (without proof).	1
4.	Simple Problems Based on Probability	1
5.	Binomial & Poisson Distributions,	1

6.	Definition of Correlation, Scatter Diagram.	1
7.	Karl Pearson's Coefficient of Correlation. Linear Regression Equations.	1
8.	Introduction to Test of Significance,	1
9.	One sample & two sample test t for Means,	1
10.	Chi-Square Test of Independence of Attributes in 2X2 Contingency Table	1
11.	Introduction to Sampling Methods	2
12.	Sampling versus Complete Enumeration,	2
13.	Use of Random Number Tables for selection of Simple Random Sample.	2

### Lecture Schedule: Practical

S. N.	Topic	No. of lectures
1.	Graphical Representation of Data.	1
2.	Measures of Central Tendency (Ungrouped data) with Calculation of Quartiles,	1
3.	Deciles & Percentiles.	1
4.	Measures of Central Tendency (Grouped data) with Calculation of Quartiles, Deciles & Percentiles.	1
5.	Measures of Dispersion (Ungrouped Data). Measures of Dispersion (Grouped Data).	1
6.	Moments,	1
7.	Measures of Skewness & Kurtosis (Ungrouped Data).	1
8.	Moments, Measures of Skewness & Kurtosis (Grouped Data).	1
9.	Correlation & Regression Analysis.	1
10.	Application of One Sample t-test.	1
11.	Application of Two Sample Fisher's t- test.	1
12.	Chi-Square test of Goodness of Fit.	1
13.	Chi-Square test of Independence of Attributes for 2x2 contingency table.	1
14.	Analysis of Variance One Way Classification.	1
15.	Analysis of Variance Two Way Classification.	1
16.	Selection of random sample using Simple Random Sampling.	1

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