

## Faculty of Economics and Political Science

### Applied Statistics

#### Information :

**Course Code :** STS 311

**Level :** Undergraduate

**Course Hours :** 3.00- Hours

**Department :** Department of Economics

#### Area Of Study :

This course uses different statistical methods in analyzing data and how it can be attained through various sampling techniques as well as explaining sampling errors. It provides students with the suitable technicalities as conducting surveys and questionnaires. It stresses on hypothesis testing, confidence interval, interpretations of economic variables, variables estimation and sampling distributions.

Course Goals:

ÇPrepare students with a deeper insight on the possible sub-fields in economics and related fields.

ÇRecognize and analyze testing hypothesis and estimation.

ÇOrganize analyses, interpret and summarize the data in a useful and informative manner.

#### Description :

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#### Course outcomes :

##### **a.Knowledge and Understanding: :**

|     |                                                                                |
|-----|--------------------------------------------------------------------------------|
| 1 - | Understand and know the usefulness of probability in decision making.          |
| 2 - | Estimation and Testing Hypothesis                                              |
| 3 - | Select the right sample and distinguish between random and nonrandom sampling. |

##### **b.Intellectual Skills: :**

|     |                                                                                        |
|-----|----------------------------------------------------------------------------------------|
| 1 - | Appraise and analyze the hypothesis testing and confidence interval.                   |
| 2 - | Analyze real economic situation using statistical methods and provide recommendations. |
| 3 - | Interpret the results of a simple regression analysis and variables correlations.      |

##### **c.Professional and Practical Skills: :**

|     |                                                                         |
|-----|-------------------------------------------------------------------------|
| 1 - | Identify the proper statistical technique to apply to a problem.        |
| 2 - | Estimate the mean and proportion of population from sample information. |
| 3 - | Calculate the trade-off between sample size and error.                  |
| 4 - | Practice decision making through hypothesis testing.                    |

**d.General and Transferable Skills: :**

|     |                                                                                          |
|-----|------------------------------------------------------------------------------------------|
| 1 - | Enhance creative and critical thinkers.                                                  |
| 2 - | Experience with conceptual frameworks effective for problem solving and decision making. |
| 3 - | Acquire analytical reasoning skills, numeric and clear effective communication skills.   |
| 4 - | Test the ability of students to work under pressure and as part of a team                |

**Course Topic And Contents :**

| Topic                                                                                                                                     | No. of hours | Lecture | Tutorial / Practical |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------|---------|----------------------|
| Introductory Lecture and Course Outline                                                                                                   | 3            | 1       |                      |
| Introduction to Sampling Distribution:<br>ÇSampling Error                                                                                 | 3            | 1       |                      |
| Estimation of Single Population Parameter                                                                                                 | 3            | 1       |                      |
| Confidence Interval Estimate for the Population Mean                                                                                      | 9            | 3       |                      |
| Introduction to Hypothesis Testing:<br>ÇHypothesis Testing for Means<br>ÇHypothesis Testing for a Proportion                              | 3            | 1       |                      |
| Midterm Exam                                                                                                                              |              | 2       |                      |
| Estimation and Hypothesis Testing for Two Population Parameter:<br>ÇHypothesis Testing for two population Means using Independent Samples | 3            | 1       |                      |
| Hypothesis Testing for paired Samples                                                                                                     | 3            | 1       |                      |
| Hypothesis Testing:<br>ÇSingle Population Variance<br>ÇTwo Population Variance                                                            | 3            | 1       |                      |
| Analysis of Variance                                                                                                                      | 3            | 1       |                      |
| Simple Regression and Correlation                                                                                                         | 3            | 1       |                      |
| Final Exam                                                                                                                                |              | 1       |                      |

**Teaching And Learning Methodologies :**

|                                    |
|------------------------------------|
| Data show and computer in lectures |
| Presentations                      |
| Group discussion                   |

**Course Assessment :**

| Methods of assessment                                                           | Relative weight % | Week No | Assess What                                                                                            |
|---------------------------------------------------------------------------------|-------------------|---------|--------------------------------------------------------------------------------------------------------|
| Course Work (Attendance, Participation, Assignments, Quizzes, Research Paperè ) | 30.00             |         | To assess theoretical background of the intellectual and practical skills and to assess understanding. |
| Final Exam                                                                      | 40.00             | 15      | To assess knowledge and intellectual skills.                                                           |
| Midterm Exam(s)                                                                 | 30.00             |         | To assess professional skills.                                                                         |

