Department of Gender Studies
Faculty of Behavioral and Social Sciences
University of the Punjab, Lahore

Course Outline

Program	BS Gender Studies	Course Code	GS 127	Credit Hours	3
Course Title	**Introduction to Statistical Analysis**				

Course Introduction

This course provides an introduction to statistical methods and data analysis using the Statistical Package for the Social Sciences (SPSS) software. This course offers the fundamentals of SPSS, including planning and designing a research study, data entry, manipulation and basic statistical analysis techniques. Both descriptive and inferential statistical techniques will be discussed in this course which are crucial to analyze and interpret results by using SPSS. Additionally, the course will cover the best practices for data management and reporting findings in research regarding to gender and climate change context.

Learning Outcomes

After completion of this course, the students will be able to:

1. learn the fundamentals skills of SPSS and data analysis techniques.
2. understand basic concepts to understand, perform and interpret the descriptive and inferential statistical techniques.
3. Do hands-on practice using purposely structured data sets for different exercises.
4. Trough hands-on exercises and practical examples, students will develop proficiency in conducting statistical analysis and interpreting results using SPSS.

	Course Content	Assignments/Readings
Week 1	**Introduction to SPSS** ● Planning the study ● Choosing appropriate scales and measures ● Preparing a questionnaire ● Designing a study	Field A. (2013*). Discovering Statistics using SPSS Statistics* (4th. Ed). London: SAGE Publications.
Week 2	**Creating Codebook** ● Preparing a codebook ● Variables names; Coding responses	Heumann, C., & Shalabh, M. S. (2016). *Introduction to statistics and data analysis*. Springer.

	● Coding open-ended questions ● Getting to know SPSS; Starting SPSS	Agresti, A. (2007). *An Introduction to categorical data analysis*. Canada: John Wiley & Sons.
Week 3	**Starting SPSS** ● Working with SPSS data files ● SPSS windows; Menus	Lomax, R. G., & Hahs-Vaughn, D. L. (2013). *An introduction to statistical concepts*. Routledge.
	● Dialogue boxes Closing and Saving SPSS File	Heumann, C., & Shalabh, M. S. (2016). *Introduction to statistics and data analysis*. Springer.
Week 4	**Preparing the data file** ● Prepare data files; Variable view file; Data view file ● Defining the variables; Entering data	Gaur A. S. & Gaur S.S. (2009). *Statistical Methods for Practice and Research: A Guide to Data Analysis Using SPSS (2nd Ed).* Singapore: SAGE Publications.
	● Modifying the data file; Data entry using Excel; ● Creating a data file and entering data	
Week 5	**Assessing and filtering the data** ● Screening and cleaning the data	Mosteller, F., Fienberg, S. E., & Rourke, R. E. (2013). *Beginning*

	● Checking for errors	*statistics with data analysis*. Courier Corporation.
	● Finding and correcting the error in the data file Case summaries	
Week 6	**Data Handling in SPSS** ● Sorting Cases ● Merging Files ● Aggregating Cases	Lomax, R. G., & Hahs-Vaughn, D. L. (2013). *An introduction to statistical concepts*. Routledge.
	● Splitting Files ● Selecting Cases ● Recoding Values ● Computing New Variables	Field A. (2013*). Discovering Statistics using SPSS Statistics* (4th. Ed). London: SAGE Publications.
Week 7	**Preliminary Analyses** ● Descriptive statistics ● Categorical variables; Continuous variables	Agresti, A. (2007). *An Introduction to categorical data analysis*. Canada: John Wiley & Sons.
	● Missing data; Assessing normality ● Checking for outliers; Additional exercises	
Week 8	**Graphical Data Exploration** ● Using graphs to describe and explore the data ● Histograms; Bar graphs; Line graphs; Scatterplots; Boxplots; ● Interpretation of output from graphs	Mosteller, F., Fienberg, S. E., & Rourke, R. E. (2013). *Beginning statistics with data analysis*. Courier Corporation.

	● Editing a chart or graph; Importing charts and graphs into Word documents; ● Additional exercises	
Week 9	**Data Manipulation** ● Manipulating data ● Calculating total scale scores	Pallant J. (2007). *SPSS Survival Manual: A Step-by-Step Guide to Data Analysis using SPSS for Windows (3rd Ed.)* England: Open University Press.
	● Transforming variables ● Collapsing a continuous variable into groups ● Collapsing the number of categories of a categorical variable; Additional exercises	
Week 10	**Evaluating Scale Reliability** ● Checking the reliability of a scale ● Procedure for checking the reliability of a scale	Frost, J. (2019). *Introduction to statistics*. Statistics By Jim Publishing. https://statisticsbyjim.com/basics/correlations.
	● Details of example; Interpreting the output from reliability ● Presenting the results from reliability; Additional exercises	
Week 11	**Selecting Appropriate/Right Statistic** ● Choosing the right statistic	

	● Overview of the different statistical techniques	
	● The decision-making process ● Key features of the major statistical techniques ● Summary table of the characteristics of the main statistical techniques;	
Week 12	**Statistical techniques to explore relationships among variables** ● Correlation ● Pearson Correlation	Mosteller, F., Fienberg, S. E., & Rourke, R. E. (2013). *Beginning statistics with data analysis*. Courier Corporation.
	● Preliminary analyses for correlation ● Interpretation of output from correlation ● Presenting the results from correlation into word document	
Week 13	**: Calculating Variables Correlation** ● Obtaining correlation coefficients between groups of variables	Heumann, C., & Shalabh, M. S. (2016). *Introduction to statistics and data analysis*. Springer. Lomax, R. G., & Hahs-Vaughn, D. L. (2013). *An introduction to statistical concepts*. Routledge.
	● Comparing the correlation coefficients for two groups Testing the statistical significance of the difference	

	between correlation coefficients Additional exercises	
Week 14	**Statistical techniques to compare groups** ▪ Assumptions; Type 1 error; Type 2 error ▪ Calculating Effect size Missing data	Agresti, A. (2007). *An Introduction to categorical data analysis*. Canada: John Wiley & Sons. Field A. (2013*). Discovering Statistics using SPSS Statistics* (4th. Ed). London: SAGE Publications.
	▪ Overview on one sample t-test ▪ Independent-sample t-test ▪ Paired-samples t-test; Additional exercises	
Week 15	**Statistical techniques to compare groups by using ANOVA** ▪ One-way between ANOVA; Additional exercises ▪ Details of example	Pallant J. (2007). *SPSS Survival Manual: A Step-by-Step Guide to Data Analysis using SPSS for Windows (3rd Ed.)* England: Open University Press.
	▪ Two-way ANOVA ▪ Interpretation of output from two-way ANOVA ▪ Presenting the results from two-way ANOVA; Additional analysis	
Week 16	**Non-Parametric Test** ▪ Major Assumption of non-parametric test ▪ Spearman rank Correlation ▪ Chi-square; Mann-Whitney U Test; Additional exercises	Agresti, A. (2007). *An Introduction to categorical data analysis*. Canada: John Wiley & Sons.

		Field A. (2013*). Discovering Statistics using SPSS Statistics* (4th. Ed). London: SAGE Publications.

Teaching Learning Strategies

Working on Assignments, Presentations, Group Discussions, Individual Assessment and Quizzes.

Assignments: Types and Number with Calendar

1. Assignments: Week 1, week 6
2. Quizzes: Week 3, week 12
3. Group presentations and project submission: Week 15 and week 16

Assessment

Sr. No.	Elements	Weightage	Details
•	Midterm Assessment	35%	Written Assessment at the mid-point of the semester.
•	Formative Assessment	25%	Continuous assessment includes: Classroom participation, assignments, presentations, viva voce, attitude and behavior, hands-on-activities, short tests, projects, practical, reflections, readings, quizzes etc.
•	Final Assessment	40%	Written Examination at the end of the semester. It is mostly in the form of a test, but owing to the nature of the course the teacher may assess their students based on term paper, research proposal development, field work and report writing etc.