



UNIVERSITI TEKNOLOGI MARA

EDU541: BASIC DATA ANALYSIS

Course Name (English)	BASIC DATA ANALYSIS APPROVED
Course Code	EDU541
MQF Credit	2
Course Description	The purpose of this course is to provide educators with basic knowledge of statistics and to assist them in acquiring skills and techniques for using, understanding and interpreting statistical procedures appropriate in a given situation. It is designed to prepare prospective teachers to teach statistics in the secondary school by blending instructional techniques and statistical concepts related to the teaching of statistics. Major areas to be covered include Descriptive and Inferential Statistics, and applications of SPSS as a tool in assisting data analysis and interpretation. Students will be given an opportunity to exercise their acquired skills through research projects agreed upon by the course instructor. The focus of the course will be on developing conceptual understanding of statistics (not computations) and the application and interpretation of statistics in meaningful ways using examples from educational settings.
Transferable Skills	Reflective Learner
Teaching Methodologies	Lectures, Lab Work, Discussion
CLO	CLO1 • Apply basic statistical concepts and procedures in analyzing data CLO2 • Use SPSS to assist in organizing, analyzing and interpreting data CLO3 • Correlate research questions with appropriate choices of statistical analyses
Pre-Requisite Courses	No course recommendations
Topics	
1. introduction to statistics 1.1) Discussion will be on elementary statistical concepts that provide the necessary foundations for more specialized expertise in any area of statistical data analysis. It includes what is statistics? Definition and Purpose of Statistics, Key statistical concepts: Population and Sample, Variable, Basic definitions, Types of data and Scales of Measurement.	
2. Descriptive statistics 2.1) Define the term of descriptive statistics; differentiate between descriptive and inferential statistics in terms of purpose. Graphical descriptive method: frequency distribution, histogram and frequency polygon; Numerical descriptive methods: measures of central tendency: mode, median, mean. Measure of dispersion: range, variance, standard deviation. Type of research questions and its appropriateness using descriptive analyses. 2.2) Introduction to Basic Data Analysis Using SPSS: Descriptive statistics. Analysing descriptive statistics using SPSS and interpreting the output.	
3. Inferential statistics 3.1) Purpose of inferential statistics; differentiate sampling error from measurement error; null hypothesis and describe its role in inferential statistics; level of significance and describe its use in inferential statistics; the meaning of the term statistically significant. Among the analysis of tests and measures to be discussed are T-test, Analysis of variance (ANOVA), correlation and Chi-Square; type of research questions and its appropriateness using inferential analyses. 3.2) Introduction to Basic Data Analysis Using SPSS: Inferential statistics 3.3) Analysing Inferential statistical tests using SPSS and interpreting the output.	

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Final Test	TO ACHIEVE CLO1	40%	CLO1
	Group Project	Students will submit a written report	40%	CLO3
	Practical	Student will display their ability in analysing and interpreting data using SPSS in the lab	20%	CLO2

Reading List	Reference Book Resources	<ul style="list-style-type: none"> • Parmjit, S 2009, <i>Quantitative Data Analysis for Novice Researc</i>, Primary Publication, Kuala Lumpur. • Bain, L. J & Englehard, M 1992, <i>Introduction to Probabality and Mathematical</i> , Duxbury Press • Mendenhall, W & Sincich, T 1995, <i>Statistics for Engineering and the Sciences</i>, 4 Ed., Prentice Hall, Inc, New Jersey • Kirk, R.E 1990, <i>Statistics: An Introduction</i>, 3 Ed., Holt, reinhart and Winston, Inc • H. halilah, I. Mohd. Said & Y. Fatimah 2002, <i>Business Statistics</i>, UiTM Document Services Sdn Bhd, Shah Alam
	Article/Paper List	This Course does not have any article/paper resources

Other References	This Course does not have any other resources
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