UNIVERSITI TEKNOLOGI MARA

COM570: QUANTITATIVE DATA ANALYSIS IN COMMUNICATION RESEARCH

Course Name (English)	QUANTITATIVE DATA ANALYSIS IN COMMUNICATION RESEARCH APPROVED
Course Code	COM570
MQF Credit	3
Course Description	This course is designed to introduce students to various statistical method in data analysis. Hence, students will learn about descriptive and inferential statistics and how to use these statistical procedures to answer the research questions or to test the hypotheses. Throughout the course students will study the integrated concepts and ideas of statistics and its application in research and decision making, in various communication disciplines. Students will learn how to key-in data in the SPSS template from questionnaires set, process, analyse, and interpret the data and finally report the findings
Transferable Skills	Students are able to process and analyse data with SPSS software, and interpret the output
Teaching Methodologies	Lectures, Tutorial
CLO	CLO1 Identify concepts and procedures of statistics CLO2 Interpret descriptive and inferential analysis related to research questions or hypotheses CLO3 Apply knowledge and understanding of principles, theories and practices in quantitative analysis CLO4 Demonstrate autonomous learning in relevant communication research projects
Pre-Requisite Courses	No course recommendations

Topics
1. Introduction to Statistics 1.1) 1.1 Statistics and scientific research 1.2) 1.2 Population and samples 1.3) 1.3 Data structures 1.4) 1.4 Variables and measurement 1.5) 1.5 Statistical notation
2. SPSS Application 2.1) 4.1 Data Entry 2.2) 4.2 Data Processing 2.3) 4.3 Data Analysis using descriptive statistics
3. Frequencies Distribution 3.1) 2.1 Introduction to frequency distribution 3.2) 2.2 Frequency distribution tables 3.3) 2.3 Frequency distribution graphs 3.4) 2.4 The shape of a frequency distribution 3.5) 2.5 SPSS application
4. Central Tendency and Variability 4.1) 3.1 Mean, median, and mode 4.2) 3.2 Selecting a measure of central tendency 4.3) 3.3 Central tendency and the shape of the distribution 4.4) 3.4 Standard deviation and variance 4.5) 3.5 Comparing measures of variability 4.6) 3.6 SPSS application

5. z-Scores 5.1) 5.1 Introduction to z-scores 5.2) 5.2 z-Scores and location in a distribution 5.3) 5.3 Using z-scores to standardize a distribution 5.4) 4.4 Computing z-Scores for Samples
6. Probability 6.1) 6.1 Probability and normal distribution 6.2) 6.2 Probability and proportions for scores from a normal distribution 6.3) 6.3 Probability and the distribution of sample means
7. Introduction to Hypothesis Testing 7.1) 7.1 The logic of hypothesis testing 7.2) 7.2 Uncertainty and errors in hypothesis testing 7.3) 7.3 General elements of hypothesis testing 7.4) 7.4 Normality of data distribution
8. One sample t-test 8.1) 8.1 The t statistic as an alternative to z 8.2) 8.2 Hypothesis tests with the t statistics 8.3) 8.3 One-tailed and two-tailed tests 8.4) 8.4 SPSS application
9. Two independent samples t-test 9.1) 9.1 The t-test for two independent samples 9.2) 9.2 Estimation with the t statistic 9.3) 9.3 SPSS application
10. Two related samples t-test 10.1) 10.1 Two related sample t-test 10.2) 10.2 SPSS application
11. Introduction to Analysis of Variance (ANOVA) 11.1) 11.1 The logic of analysis of variance 11.2) 11.2 The distribution of F-ratio 11.3) 11.3 Hypothesis testing with ANOVA 11.4) 10.4 SPSS application
12. Introduction to Correlation 12.1) 12.1 The Pearson correlation 12.2) 12.2 Understanding and interpreting the Pearson correlation 12.3) 12.3 Hypothesis tests with the Pearson correlation 12.4) 11.4 SPSS application
13. Chi-square test 13.1) 13.1 Nonparametric statistical tests 13.2) 13.2 The chi-square test for goodness of fit 13.3) 13.3 The chi-square test for independence 13.4) 12.4 Assumptions and restrictions for chi-square 13.5) 12.5 SPSS application
14. Report the findings 14.1) 14.1 Data interpretation – descriptive and inferential statistics 14.2) 14.2 Report of findings 14.3) 15.3 Reliability analysis

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment

Assessment Type	Assessment Description	% of Total Mark	CLO
Assignment	Assignment 1	20%	CLO1
Assignment	Individual assignments - 2a	20%	CLO2
Assignment	Individual assignments - 2b	20%	CLO3
Group Project	Group Project	40%	CLO4

Reading List

Recommended Text

- **Ahlam Abdul Aziz, Zaridah Abdullah & Antashah Mohd Nor 2020, *Quantitative data analysis in communication research*, UiTM Press Shah Alam, Malaysia [ISBN: 978-967-363-6]**
- **Gravetter, F.J. & Wallnau, L.B 2013, *Essentials of statistics for the behavioral sciences)*, 9th.ed Ed., Wadsworth Belmont, CA, USA [ISBN: 13: 978-11339]**
- **Aron, A., Coups, E., & Aron, E. N. 2010, *Statistics for the behavioral and social sciences: A brief course (5th. Ed.)*, 5th. ed Ed., Pearson USA [ISBN: 13: 978-02057]**
- **Coakes, S.J. 2013, *SPSS: Analysis without anguish: version 20.0 for Windows*, John Wiley & Sons Australia [ISBN: 13: 978-11183]**
- **Gravetter, F.J. & Wallnau, L.B 2013, *Statistics for the behavioral sciences.*, 9th.ed Ed., Wadsworth Belmont, CA, USA [ISBN: 13: 978-11118]**
- **Nolan, S. & Heinzen, T. 2011, *Statistics for the behavioral sciences*, 2nd. ed Ed., Worth New York, USA [ISBN: 13: 978-14292]**
- **Klass, G.M. 2012, *Just plain data analysis: Finding, Presenting, and interpreting social science data*, 2 Ed., Rowan & Littlefield Publisher Maryland, USA**

Article/Paper List: This Course does not have any article/paper resources

Other References: This Course does not have any other resources