



UNIVERSITI TEKNOLOGI MARA

COM531: SCIENTIFIC TECHNIQUES IN COMMUNICATION RESEARCH

Course Name (English)	SCIENTIFIC TECHNIQUES IN COMMUNICATION RESEARCH APPROVED
Course Code	COM531
MQF Credit	3
Course Description	This course is designed to introduce students to quantitative method in data analysis. Hence, students will be taught descriptive and inferential statistics, and testing hypotheses. Throughout the course students will be exposed to integrated concepts and ideas of statistics and its application in research and decision making, in various communication disciplines. Students will also be exposed to practical and fieldwork in communication research, such as data collection, data entry and data processing, data analysis, data interpretation, and reporting research finding. Students will also learn how to use SPSS software to process and analyse data.
Transferable Skills	Students are able to use the SPSS software to analyse data and interpret its output.
Teaching Methodologies	Lectures, Tutorial
CLO	CLO1 Recognize the basic concepts, theory, and application of basic statistics CLO2 Demonstrate the skills of applying statistical knowledge in data processing, data analysis, and data interpretation of the actual research. CLO3 Demonstrate the positive attitude toward learning and inquiring knowledge and skills of statistics in social sciences. CLO4 Relate the concepts, theories, and techniques of statistics in actual research
Pre-Requisite Courses	No course recommendations
Topics	
1. Introduction to statistics 1.1) Statistics and scientific research 1.2) Population and samples 1.3) Data structures 1.4) Variables and measurement 1.5) Statistical notation	
2. Frequencies Distribution 2.1) Introduction to frequency distribution 2.2) Frequency distribution tables 2.3) Frequency distribution graphs 2.4) The shape of a frequency distribution 2.5) SPSS application	
3. Central Tendency and Variability 3.1) Mean, median, and mode 3.2) Selecting a measure of central tendency 3.3) Central tendency and the shape of the distribution 3.4) Standard deviation and variance 3.5) Comparing measures of variability 3.6) SPSS application	
4. z-Scores 4.1) Introduction to z-scores 4.2) z-Scores and location in a distribution 4.3) Using z-scores to standardize a distribution 4.4) Computing z-Scores for Samples	

<p>5. Probability 5.1) Probability and normal distribution 5.2) Probability and proportions for scores from a normal distribution 5.3) Probability and the distribution of sample means</p>
<p>6. Introduction to Hypothesis Testing 6.1) Introduction to Hypothesis Testing 6.2) The logic of hypothesis testing 6.3) Uncertainty and errors in hypothesis testing 6.4) General elements of hypothesis testing</p>
<p>7. Introduction to the t Statistics 7.1) The t statistic as an alternative to z 7.2) Hypothesis tests with the t statistics 7.3) One-tailed and two-tailed tests 7.4) SPSS application</p>
<p>8. Application of the t Test 8.1) The t test for two independent samples 8.2) Estimation with the t statistic 8.3) The t test for two related samples 8.4) SPSS application</p>
<p>9. Introduction to Analysis of Variance (ANOVA) 9.1) The logic of analysis of variance 9.2) The distribution of F-ratio 9.3) Hypothesis testing with ANOVA 9.4) SPSS application</p>
<p>10. Introduction to Correlation 10.1) Understanding and interpreting the Pearson correlation 10.2) Hypothesis tests with the Pearson correlation 10.3) Other measures of relationship 10.4) SPSS application</p>
<p>11. Nonparametric Statistics 11.1) Nonparametric statistical tests 11.2) The chi-square test for goodness of fit 11.3) The chi-square test for independence 11.4) Assumptions and restrictions for chi-square 11.5) SPSS application</p>
<p>12. SPSS Application 12.1) Data Entry 12.2) Data analysis 12.3) Hypothesis testing 12.4) Finding interpretation</p>
<p>13. Report Writing 13.1) Finding interpretation 13.2) Report writing</p>

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Students are assigned weekly individual assignments based on topic of studies	25%	CLO1 , CLO3 , CLO4
	Group Project	Students are assigned in groups to collect data, enter data in the SPSS, analyse data, interpret output and report the findings.	20%	CLO2 , CLO3 , CLO4
	Test	Test student on their knowledge of topic 1 until topic 6	15%	CLO1 , CLO4

Reading List	Recommended Text	Reference Book Resources
	<ul style="list-style-type: none"> Gravetter, F.J. & Wallnau, L.B. 2013, <i>Essential of Statistics for the behavioral sciences</i>, 9th.ed Ed. 	<ul style="list-style-type: none"> Aron, A., Coups, E., & Aron, E. N 2010, <i>Statistics for The Behavioral and Social Sciences: A Brief Course</i>, 5th Edition Ed., Pearson USA Nolan, S. & Heinzen, T 2011, <i>Statistics for the Behavioral Sciences</i>, 2nd. edition Ed., Wadworth USA Gravetter, F.J. & Wallnau, L.B. 2013, <i>Statistics for the behavioral sciences</i>, 9th.ed Ed., Wadsworth Belmont, USA Coakes, S.J 2013, <i>SPSS: Analysis without anguish: version 20.0 for Windows</i>, John Wiley & Sons Australia
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	