FACULTY OF COMPUTER AND MATHEMATICAL SCIENCES

SCHEME OF WORK

COURSE : STATISTICS FOR BUSINESS AND SOCIAL SCIENCES (STA 404)

EFFECTIVE DATE : MARCH 2020

SEMESTER : October 2020 – January 2021

Week	Topics and Sub-Topics	No. of Hours	Remarks
1 [12/10 – 16/10]	**1.0 Introduction to Statistics** 1.1 What is Statistics 1.2 Descriptive and Inferential Statistics 1.3 Variable, Types of Data, and Level of Measurement 1.4 Data Collection Methods (telephone surveys, mailed questionnaire surveys, and personal interview) 1.5 Types of sampling (simple random sampling, stratified, systematic, cluster, convenience, quota, judgmental, and snowball)	3	**Open and Distance Learning (ODL)** Sampling Techniques: Any calculation on sampling techniques may ask in assignment. **Complete Entrance Survey (12th – 25th October 2020)**
	Tutorial	1	**Face Two Face (F2F)**
2 [19/10 – 23/10]	**2.0 Descriptive Statistics** 2.1 Organizing data (bar chart, pie chart, stem and leaf, box whisker plot, frequency distribution table and histogram) 2.2 Numerical Descriptive Measures (ungrouped data) 2.1.1 Measures of Central Tendency (mean, median, mode)	3	**Open and Distance Learning (ODL)** Do not require to set up the frequency table and histogram. Interpret result from computer output (SPSS output). Calculate manually and interpretation from computer output (SPSS output).
	Tutorial	1	**Face Two Face (F2F)**

3 [26/10 – 30/10]	2.1.2 Measures of Variation (range, standard deviation, variance, coefficient of variation) 2.1.3 Measure of Skewness 2.1.4 Measures of Position (Q1, Q2 and Q3) Tutorial	3 1	Calculate manually and interpretation from computer output (SPSS output). **Face Two Face (F2F)**
Maulidur Rasul **29th October 2020 – Thursday**			**1 day**
4 [2/11 – 6/11]	**3.0 Estimation** 3.1 Sampling Distribution of the Mean 3.2 Interval Estimation for a Mean (covered both σ known and unknown) • Small sample • Large sample Tutorial	 3 1	**Open and Distance Learning** Introduce to Normal distribution and t-distribution table Calculate manually confidence interval and interpretation from computer output (SPSS output). **Face Two Face (F2F)**
5 [9/11 – 13/11]	3.3 Interval Estimation for the Difference Between Two Means (covered both σ known and unknown) • Small sample • Large sample Tutorial	3 1	**Open and Distance Learning** Briefly introduce to the students on Levene's Test for Equality Variances. Calculate manually and interpretation from computer output (SPSS output). **Face Two Face (F2F)**

6 [16/11 – 20/11]	3.4 Interval Estimation for the Difference Between Two Means (Dependent Sample) Tutorial	3 1	**Open and Distance Learning** Calculate manually and interpretation from computer output (SPSS output). **Face Two Face (F2F)**
7 [23/11 – 27/11]	**4.0 Hypothesis Testing** 4.1 Test of Mean Difference 4.1.1 Concept of Hypothesis 4.1.2 Testing for a Mean Tutorial **Assessment 1 :** **Take Home Quiz : Topic 1 – 3**	 2 1 1	**Open and Distance Learning** Students need to know how to interpret result from output (SPSS output) and calculation. **Face Two Face (F2F)** **Suggested Duration Take Home Quiz: 1 hour**
Midterm **30th November – 6th December 2020**			**1 week**
8 [7/12 – 11/12]	4.1.3 Testing the Difference Between Two Means (large sample) 4.1.4 Testing the Difference Between Two Means (independent variables) Equal variances. ($\sigma_1^2 = \sigma_2^2$) Tutorial	‘ 3 1	**Open and Distance Learning** Students need to know how to interpret result from output (SPSS output) and calculation (involve on ONLY small sample size). **Face Two Face (F2F)**

9 [14/12 – 18/12]	4.1.5 Testing the Difference Between Two Means (independent variables) Unequal variances. ($\sigma_1^2 \neq \sigma_2^2$)	3	**Open and Distance Learning** Students need to know how to interpret result from output (SPSS output). Briefly explanation on Project. **Student Feedback Online (SuFO) (14th December 2020 – 31st January 2021)**
	Tutorial	1	**Face Two Face (F2F)**
10 [21/12 – 25/12]	4.1.6 Testing the Difference Between Two Means (dependent sample)	3	**Open and Distance Learning** Students need to know how to interpret result from output (SPSS output). Briefly explanation on Project.
	Tutorial	1	**Face Two Face (F2F)**
Christmas Day 25th December 2020 – Friday			**1 day**
11 [28/12 – 1/1]	4.1.7 Testing for the Difference Among More Than Two Means (One-Way Analysis of Variance)	2	**Open and Distance Learning** Students need to know how to interpret result from output (SPSS output). Introduce to *F*-distribution. Briefly explanation on Project

	Tutorial	1	**Face Two Face (F2F)**
New Year 1st January 2021 – Friday			**1 day**
12 [4/1 – 8/1]	4.2 Test for Independence	3	**Open and Distance Learning** Students need to know how to interpret result from output (SPSS output). Introduce to *Chi-Square* distribution.
	Tutorial **Assessment 3 : Case Study Assignment : 1 – 4**	1	**Face Two Face (F2F)** **Case Study Assignment Submission**
13 [11/1 – 15/1]	**5.0 Bivariate Analysis** 5.1 Correlation • Pearson product moment correlation coefficient 5.2 Simple linear regression • An overview of regression • Scatter diagram	3	**Open and Distance Learning** Students need to know how to interpret result from output (SPSS output). **Complete Exit Survey (11th – 24th January 2021)**
	Tutorial **Assessment 3 : Group Project**	1	**Face Two Face (F2F)** **Project Submission**

Hari Keputeraan YDBP Negeri Sembilan **14th January 2020**			**1 day**
14 [18/11 – 22/1]	• Discuss model and parameter estimation using method least of squares. • Make interpretation of the estimated parameters • Making prediction • Coefficient of determination, r^2 **Tutorial** **Assessment 2** **Test : Topic 4 – 5**	3 1	**Open and Distance Learning** Students need to know how to interpret result from output (SPSS output). **Face Two Face (F2F)** **Suggested Duration Take Home Test: 2 hours**
Revision Week **25th – 31st January 2021**			**1 week**
Final Assessment **(Assessment 4 : Topic 1 – 5)** **1st – 23rd February 2021**			**3 weeks**
Result Announcement **will be announce later**			-
Semester Break **24th February – 28th March 2021**			**5 weeks**

Assessment

1. Apply appropriate concepts and methods to solve given problems related to statistics for business and social sciences (C3).

2. Demonstrate communication skills in a group project on topics related to statistics for business and social sciences (A3).

3. Demonstrate lifelong learning skills in carrying out assignments related to statistics for business and social sciences (A3).

Assessment	Name of Assessment	Suggested Topic Cover	Full Marks	Weighted	Total %	PLO	NOTE
1	Take Home Quiz	1 – 3	20	10%	10%	1	Duration Take Home Quiz : 30 minutes Duration for Submission : 15 minutes
2	Take Home Test	4 – 5	50	30%	30%	1	Duration Take Home Test : 1 hour and 30 minutes Duration for Submission : 15 minutes
3	Assignment	1 – 4	20	10%	20%	7	5 days from the due submission date of the case study assignment
	Group Project		50	10%		4	30 days from the due submission date of the group project
4	Final Assessment (Take Home Test)	1 – 5	60	40%	40%	1	Duration Final Assessment : 2 hours Duration for Submission : 15 minutes
	Total				100%		

Recommended Text

Allan G.Bluman, Elementary Statistics: A Step by Step Approach, 10th ed., McGraw-Hill Education, 2018, ISBN: 9781259922015

References

1. Kieth A. Carlson & Jennifer R. Winquist, An Introduction to Statistics: An Active Learning Approach, 2nd ed., SAGE Publications Inc., 2017, ISBN: 978148337873
2. Evan M. Berman & XiaoHu Wang, Exercising Essential Statistics, 4th ed., SAGE Publications Inc., 2017, ISBN: 978-150634895
3. Neil Weiss, Introductory Statistics, 10th ed., Pearson Education Inc., 2017, ISBN: 9780321989178
4. Ronald E.Walpole, Raymond H.Myers, Sharon L.Myers & Keying Ye, Probability and Statistics for Engineers and Scientist, 9th ed., Pearson Education Inc., 2017, ISBN: 978933251908
5. T. Rajaretnam, Statistics for Social Sciences, 1st ed., SAGE Publications, 2016, ISBN: 978935150655
6. Howard M. Reid, Introduction to Statistics, 1st ed., SAGE Publications Inc, 2013, ISBN: 9781452271965
7. Sheridan J. Coakes, SPSS: Analysis Without Anguish Using SPSS Version 20, 20th ed., John Wiley & Sons Inc., 2012, ISBN: 978111833776
8. Robert H.Carver & Jane Gradwohl Nash, Doing Data Analysis with SPSS®: Version 18.0, 5th ed., Cengage Learning, 2012, ISBN: 978084004916
9. John Murdoch & John Anthony Barnes, Statistical Tables for Students of Science, Engineering, Psychology, Business, Management, Finance, 4th ed., Macmillan Education, 1998, ISBN: 9780333558591