



**School of Management
Semester 1, Academic Session 2015/2016**

**Bachelor of Management
COURSE OUTLINE
ATW123/AEW125 BUSINESS STATISTICS**

(Friday: 10 am to 12 noon)

(Lecture Hall: DK D / F / W)

Lecturers:

Tn. Hj. Yusof Hamdani Bin Jalalludin (DK W)
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Dr. Teh Sin Yin (DK D)
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COURSE SYNOPSIS

This course is designed to give students exposure on the basics concept of statistics that being used in business and management. Students will be introduced to descriptive statistics, basic probability, probability distributions, estimation and confidence intervals, hypothesis testing and regression analysis. This course will enhance student's capability to make analysis decisions and use them in solving business and management problems. Statistics is also use to show the importance of business and management sustainability; and to measure the development of a sustainable or green economy.

COURSE OBJECTIVES

1. To expose to the students the basic of quantitative methods in management.
2. To discuss the basic concepts of statistics such as descriptive statistics, probability, probability distributions, sampling and sampling distributions.
3. To expose to the students the IBM SPSS software and use it for data analysis, so the students become familiar with the nature of the software output.
4. To expose to the students the estimation, hypothesis testing (one and two population), variance, chi-square, correlation and regression analysis.

LEARNING OUTCOMES

At the end of the course, students will be able to:

1. describe data
2. differentiate probability and sampling distribution
3. use techniques that are related to statistical analysis
4. understand the uses of the IBM Statistical Package for Social Science (SPSS)
5. apply decision analysis techniques in solving business problems.

STUDENT LEARNING TIME (SLT)

SLT	Descriptions	Hours
Face to face Activities	• Lecture	28
	• Tutorial	14
	• Consultation	14
Self-Learning Activities	• Independent Learning	50
	• Revision	14
	• Assessment Preparation	14
Formal Assessment	• Continuous Assessment (Midterm/Quiz/Test)	4
	• Final Exam	3
TOTAL SLT		141

COURSE ASSESSMENT

Coursework	40%
Online Quizzes	10%
Midterm Test	15%
Group Project	15%
Final Exam	60%
Total	<u>100%</u>

Assessment	Course Objectives	Learning Outcomes	*Levels Of Learning
Quiz/ Assignment	1, 2	1, 2	K, C, AP
Group Project	1, 2, 3, 4	1, 2, 3, 4,5	K, AP, AN, S, E
Midterm Test	1, 2, 3	1, 2, 4	K, C, AP, AN, S, E
Final Exam	1, 2, 3, 4	1, 2, 3, 4	K, C, AP, AN, S, E

* Levels of Learning:

- Knowledge (K)
- Comprehension (C)
- Application (AP)
- Analysis (AN)
- Synthesis (S)
- Evaluation (E)

DESCRIPTION OF ASSESSMENT:

Online Quizzes (10%)

A few selected problems from each chapter must be answered by student via online platform.

Mid Semester Test (15%)

60~70 multiple choice questions will be given encompassing memory recall and comprehension up to the application of data analysis.

IBM SPSS Group Project (15%)

This is a group project. Each group will have to conduct a simple survey to collect some data. Students are required to arrange and analyze the data by using IBM SPSS software and to prepare a report.

Final Exam (60%)

The examination will consist of five compulsory questions for three hours exam. Encompass all types of questions from memory recall until analysis. Sample of questions include: to calculate, to test, to compare and to correlate data. Students will be asked to use IBM SPSS output for decision analysis.

COURSE CONTENT

Week	Topic	Task/Reading
Week 1 (11/9/2015)	Introduction To Statistics <ul style="list-style-type: none"> • Introduction • Why Study Statistics? • What Is Meant By Statistics? • Types Of Statistics • Types Of Variables • Level Of Measurement 	Chapter 1
Week 2 (18/9/2015)	Describing Data: Frequency Tables, Frequency Distributions, Graphic Presentation <ul style="list-style-type: none"> • Introduction • Constructing a Frequency Table • Constructing Frequency Distributions • Relative Frequency Distribution • Graphic Presentation of a Frequency Distribution Describing Data: Frequency Tables, Frequency Distributions, Graphic Presentation and Numerical Measures <ul style="list-style-type: none"> • Introduction • The Population Mean • The Sample Mean • Properties of the Arithmetic Mean • The Weighted Mean 	Chapters 2 & 3

Week	Topic	Task/Reading
	<ul style="list-style-type: none"> • The Median • The Mode • The Relative Positions of the Mean, Median and Mode • Why Study Dispersion • Measure of Dispersion • Interpretation and Uses of the Standard Deviation 	
Week 3 (25/9/2015)	HARI RAYA HAJI	
Week 4 (2/10/2015)	Describing Data: Displaying and Exploring Data <ul style="list-style-type: none"> • Introduction • Dot Plots • Measures of Position • Skewness • Describing the Relationship between Two Variables 	Chapter 4

Week	Topic	Task/Reading
Week 5 (9/10/2015)	A Survey of Probability Concepts <ul style="list-style-type: none"> • Introduction • What is a Probability? • Approaches to Assigning Probabilities • Some Rules for Computing Probabilities • Contingency Tables • Tree Diagrams • Principles of Counting 	Chapter 5
Week 6 (16/10/2015)	Discrete Probability Distributions <ul style="list-style-type: none"> • Introduction • What Is a Probability Distribution? • Random Variables • The Mean, Variance, and Standard Deviation of a Probability Distribution • Binomial Probability Distribution • Poisson Probability Distribution Continuous Probability Distributions <ul style="list-style-type: none"> • Introduction • The Family of Normal Probability Distribution • The Standard Normal Probability Distribution 	Chapters 6 & 7

Week	Topic	Task/Reading
Week 7 (23/10/2015)	Sampling Methods and the Central Limit Theorem <ul style="list-style-type: none"> • Introduction • Sampling Methods • Sampling "Error" • Sampling Distribution of the Sample Mean • The Central Limit Theorem • Using the Sampling Distribution of the Sample Mean Estimation and Confidence Intervals <ul style="list-style-type: none"> • Introduction • Point Estimate for a Population Mean • Confidence Intervals for a Population Mean • A Confidence Interval for a Proportion • Choosing an Appropriate Sample Size 	Chapters 8 & 9
Week 8 (30/10/2015)	MID-TERM EXAM Chapters 1 to 8	

Week	Topic	Task/Reading
Week 9 (6/11/2015)	One-Sample Tests of Hypothesis <ul style="list-style-type: none"> • Introduction • What is a Hypothesis? • What is Hypothesis Testing? • Five-Step Procedure for Testing a Hypothesis • One-Tailed and Two-Tailed Tests of Significance • Testing for a Population Mean: Known Population Standard Deviation • p-Value in Hypothesis Testing • Testing for a Population Mean: Population Standard Deviation Unknown • Tests Concerning Proportions 	Chapter 10
Week 10	MID-SEMESTER BREAK (09/11/2015- 15/11/2015)	
Week 11 (20/11/2015)	Two-Sample Tests of Hypothesis <ul style="list-style-type: none"> • Introduction • Two-Sample Tests of Hypothesis: Independent Samples • Two-Sample Tests about Proportions • Comparing Means with Unknown Population Standard Deviations 	Chapter 11

Week	Topic	Task/Reading
Week 12 (27/11/2015)	Analysis of Variance <ul style="list-style-type: none"> • Introduction • The F Distribution • Comparing Two Population Variances • ANOVA Assumptions • The ANOVA Test 	Chapter 12
Week 13 (4/12/2015)	Correlation and Linear Regression <ul style="list-style-type: none"> • Introduction • What Is Correlation Analysis? • The Correlation Coefficient • Testing the Significance of the Correlation Coefficient • Regression Analysis • Testing the Significance of the Slope • Evaluating a Regression Equation's Ability to Predict 	Chapter 13

Week	Topic	Task/Reading
Week 14 (11/12/2015)	Multiple Regression Analysis <ul style="list-style-type: none"> • Introduction • Multiple Regression Analysis • Evaluating a Multiple Regression Equation • Inferences in Multiple Linear Regression • Evaluating the Assumptions of Multiple Regression • Review of Multiple Regression 	Chapter 14
Week 15 (18/12/2015)	Nonparametric Methods: Goodness-of-Fit Tests <ul style="list-style-type: none"> • Introduction • Goodness-of-Fit Test: Equal Expected Frequencies • Goodness-of-Fit Test: Unequal Expected Frequencies • Limitations of Chi-Square • Testing the Hypothesis that a Distribution of Data Is from a Normal Population • Graphical and Statistical Approaches to Confirm Normality • Contingency Table Analysis 	Chapter 15

Week	Topic	Task/Reading
Week 16	REVISION WEEK (18/01/2016 - 14/02/2016)	

MAIN TEXTBOOKS

Lind, D.A., Marchal, W.G. & Wathen, S.A. (2014). *Basic Statistics for Business and Economics*, 8th Edition, McGraw-Hill, N.Y.

SUPPLEMENTARY READINGS

Groebner, D.F., Shannon, P.W. & Fry, P.C. (2014). *Business Statistics A Decision-Making Approach* (9th ed.). U.S.: Person New International Edition.

Jaggia, S. & Kelly, A. (2013). *Business Statistics: Communicating with Numbers*. McGraw-Hill International Edition.

Teh, S.Y. (2014). *Statistical Formulae and Tables*. Person Education, Inc.

Levine, D.M., Krehbiel, T.C. & Berenson, M.L. (2013). *Business Statistics: A First Course* (6th ed.). Upper Saddle River, NJ: Pearson International Edition.

Field, A. (2013). *Discovering Statistics using IBM SPSS Statistics*. USA: Sage Publications.

Pallant, J. (2011). *SPSS Survival Manual, A step by step guide to data analysis using SPSS*, NSW, Australia: Allen & Unwin.

TEACHING AND LEARNING METHODOLOGY:

Lecture, readings, discussions, use of IBM SPSS software, calculations and video (if available). You are reminded that lecture and tutorial hours are not sufficient to discuss all chapters in the textbook. Therefore please kindly read up on your own.

ATTENDANCE/STUDENTS' RESPONSIBILITIES

1. Students are required to attend classes at the **registered** slots.
2. Students must read the relevant chapter/s that is/are listed in the course outline prior to attending class.
3. Students have to fulfill 70% class attendance requirement. **Failure to observe this rule will result in the student NOT being able to sit for the final exam.**

PLAGIARISM

Kindly take note that USM and the School of Management **will not tolerate any form of plagiarism** by undergraduate students in their term papers, projects, dissertation, or examination. The American Psychological Association (APA) defines **Plagiarism** as representing "portions of another's work or data as [your] own, even if the other work or data source is cited occasionally" (<http://www.apa.org/ethics/code2002.htm#8> 11).

Students may be guilty of plagiarism if they use someone else's work as their own without citing the source in their work (report, term paper, dissertation, etc.). This includes direct copying, rephrasing, summarizing, taking someone else's idea and putting it in different words, or directly quoting passages or ideas but citing the work as a general source.

Please refer to the **APA Publication Manual (2001)** as a guide in citing and referencing other people's work to avoid being accused of plagiarism. The penalty for plagiarism is an F for the course, RM200 fine, and if found guilty by the University Disciplinary Committee, is ground for suspension and academic dismissal.

Proposed Activities for IBM SPSS Group Project (15%)

123 Developments is a development company specialising in the development of residential (rural and urban) and eco-tourism precincts. The company, in their sustainability initiative, proposes to establish a green residential and resort development on the Dugong Peninsula with the concept of *more than going green. The area has been selected because of its natural beauty of biodiversity, energy efficiency because of proximity to the coast (sustainable water management) and pristine reef. The proposal, known as the "Dugong Peninsula Sea Change Development", is being developed to meet the growing increase in population in the region. It is believed that the desire by many Malaysian to change their pace of life and *meeting their present needs without compromising the ability of their children generations to meet their future needs. You are currently working for a small consultancy practice that specializes in the area of community consultation and you are required to provide a report to your client on the key findings of the survey to help them better understand the attitudes and behaviour of the community towards the sustainable development and eco-tourism proposal. Arrange and analyse the data by using IBM SPSS software.

[*Note: Sustainability means meeting the needs of the present without compromising the ability of future generations to meet their needs and it is more than going green.]