

SYLLABUS

Date / Revision 19 Jan 2017 / 20 Aug 2017 / PP
Faculty Business and Social Sciences
Study Programs IBA/MGT/HTM

SUBJECT: Applied Statistics

1 Basic Information

1.01	Subject Name	Applied Statistics
1.02	Semester	4
1.03	Level	1
1.04	SKS	2
1.05	Mandatory / Curriculum	D-02
1.06	Subject Code	MATH-2500
1.07	Subject Code	
1.08	Year	2017 (7)
1.09	Quality Control	Final Test, OFSE, see evaluation
1.10	Limitations	Min 12 and Max 32 students in one class
1.11	Combined with	01:AVI;
1.12	Perquisite	None
1.13	Responsible	Dr. Samuel Prasetya
1.14	Revision	20-08-2017/pp

2 Description of Subject

This course discusses the necessity to collect, identify, display and analyze numerical data, which are generated by business operations. Probability theory is also discussed to see the practical implementation on business activities and decision making purposes. The basic drawing inferences about population and sample will also be discussed as a way to examine the large population from a handful of sampled data. Hypothetical tests and basic statistical analysis are exercised to equip students with the sufficient understanding toward the business implications.

3 Objectives

- the basic of statistics, particularly the descriptive statistics
- the foundation of data and information
- the numerical type of information generated by business operations
- statistical hypothetical testing

4 Competency

After having the course, students are expected to:

- understand the basic of statistics, particularly the descriptive statistics
- understand and be able to analyze the foundation of data and information
- have the ability to identify, collect, display and analyze the numerical type of information generated by business operations
- understand probability theory and be able to use it for solving problems encountered in business
- have the ability to sample data for drawing inferences about the population from which the sample was taken
- understand the limitations of statistical analysis
- perform statistical hypothetical testing

5 Learning Approach / Methodology

- Lectures/ Class contact (time-tabled) supplemented with interactive questions and answers;
- Discuss and describe the solution of the problem in the company;
- Tutorial/Laboratory/Practice Classes: preview of materials, revision and/or reports writing;
- Student Study Effort: homework/assignment; preparation for test/quizzes/ examination.

6 Evaluation

5.1	Absence maximum	25%
5.2	Participation in Discussion	05 Points
5.3	Homework / Classwork	05 Points
5.4	Presentation /Simulation	10 Poin
5.5	Daily Quiz	20 Points
5.6	Final Examination	60 Points
	Total	100 Points

7	Text Book and Reference
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1	Main Text Book: Lind, Douglas A, William G. Marchal & Samuel A. Wathen, Statistical Techniques in Business & Economics, 15th Edition, McGraw-Hill/Irwin
2	Supplement Textbooks: Various online journal articles.

8	Content / Topics of Lecture
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Week	Content / Topics of Lecturing	Text Book Chapter	Remark
1	What is Statistics? <ul style="list-style-type: none"> • Why study statistics? • Types of statistics • Types of variables • Levels of measurements 	Chapter 1	
2	Describing Data: <ul style="list-style-type: none"> • Frequency tables • Frequency distribution • Displaying & exploring data 	Chapter 2 & 4	
3	Describing Data: <ul style="list-style-type: none"> • Numerical measurements 	Chapter 3	
4	Concepts on Probability <ul style="list-style-type: none"> • Basic concepts • Contingency table • Conditional probability • Decision tree • Principles of counting 	Chapter 5	Quiz 1 Draft 1
5	Discrete Probability Distribution <ul style="list-style-type: none"> • Probability distribution • Covariance • Binomial distribution • Poisson distribution 	Chapter 6	
6	Continuous Probability Distribution <ul style="list-style-type: none"> • Normal distribution • Measuring normality • Normal distribution 	Chapter 7	
7	Review	Chapter 1-7	Quiz 2 Draft 2
8	Semester Break: Only Make-Up Classes		
9	Sampling Methods & Central Limit Theorem <ul style="list-style-type: none"> • Sampling method • Sampling distribution 	Chapter 8	
10	Estimation & Confidence Interval <ul style="list-style-type: none"> • Confidence interval for mean • Confidence interval for proportion 	Chapter 9	

Week	Content / Topics of Lecturing	Text Book Chapter	Remark
11	One-Sample Tests of Hypothesis <ul style="list-style-type: none"> Hypothesis testing Testing for significance Testing for population mean Testing for proportion 	Chapter 10	
12	Two-Sample Test of Hypothesis <ul style="list-style-type: none"> Hypothesis testing on independent sample Hypothesis testing on dependent sample Testing on proportion Comparing means 	Chapter 11	Quiz 3 Draft 3
13	Analysis of Variance <ul style="list-style-type: none"> F-distribution ANOVA test Comparing population variances 	Chapter 12	
14	Correlation Linear Regression <ul style="list-style-type: none"> Correlation analysis Coefficients of correlation Coefficients of determination Testing of significance Underlying assumptions 	Chapter 13	
15	Multiple Regression Analysis	Chapter 14	Quiz 4 Draft 4
16	Semester Break: Only Make-Up Classes		
17	Final Examination	All Chapters (1-14)	