

**UNIVERSITI MALAYSIA PERLIS**  
**INSTITUT MATEMATIK KEJURUTERAAN**

**Course Outline for Business Statistics / BQT 173**  
**(Academic Session II, 2018/2019)**

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| Course code: BQT 173  |
| Course title: Business Statistics   |
| <p>Course synopsis:</p> <p>An application-oriented study of statistical concepts and techniques. The course focuses on the student as a user of statistics who needs a minimal understanding of mathematical theory and formula derivation. Major topics of study are exploration data analysis, sampling methods, constructing a hypothesis on one and two samples, performing one-way and two-way analyses of variance, Regression analysis, association test, applying nonparametric methods of statistical analysis and time series &amp; business forecasting. This course will utilize computer-based statistical software to perform statistical computation and interpreting the analysis output correctly.</p> |
| <p>Course Outcome :</p> <ol style="list-style-type: none"> <li>1. Ability to <b>apply</b> the basic statistical concept and thinking in business problems</li> <li>2. Ability to <b>formulate</b> solutions to common business decision problems through statistical analysis.</li> <li>3. Ability to <b>identify</b> and <b>decide</b> the suitable statistical method and to <b>structure</b> and <b>analyze</b> business problems statistically.</li> </ol>  |

*Teaching Plan Guide*

| Study Week | Course Content  | Delivery Mode        | Assessment                       |
|------------|---|----------------------|----------------------------------|
| 1          | 1.0 The Role of Statistical Thinking in Business<br>1.1 Component of Statistical Thinking<br>1.2 Definition of Business Statistics<br>1.3 Descriptive and Inferential Statistics<br>1.4 Ethical Issues in Statistical Data Analysis   | Lecture/<br>Tutorial | Quizzes /<br>Assignment/<br>Test |
|            | 2.0 Statistical Concepts and Language<br>2.1 The Difference Between the Population and a Sample<br>2.2 The Difference Between the Parameter and a Statistics<br>2.3 Measurement Levels<br>2.4 Sampling Methods<br>(Simple Random Sampling, Stratified Random Sampling, Cluster Sampling, Systematic Sampling, and Convenience Sampling) | Lecture/<br>Tutorial | Quizzes /<br>Assignment/<br>Test |
| 2          | 3.0 Exploration Data Analysis<br>3.1 Graphical Displays of Data<br>3.2 Measures of Central Tendency<br>3.3 Measures of Dispersion   | Lecture/<br>Tutorial | Quizzes /<br>Assignment/<br>Test |
| 3          | 4.0 Introduction to Statistical Software Package<br>4.1 Data Input<br>4.2 Data Editor<br>4.3 Data Computation and Transformation  | Lecture/<br>Tutorial | Quizzes /<br>Assignment/<br>Test |
| 4          | 5.0 Discrete Probability Distributions<br>5.1 Binomial Probability Distribution<br>5.2 Poisson Probability Distribution   | Lecture/<br>Tutorial | Quizzes /<br>Assignment/<br>Test |

|       |  |                      |                                  |
|-------|--|----------------------|----------------------------------|
| 5     | 6.0 Continuous Probability Distributions<br>6.1 Normal Probability Distribution<br>6.2 Standard Normal Probability Distribution<br>6.3 Binomial Approximation<br>6.4 Poisson Approximation   | Lecture/<br>Tutorial | Quizzes /<br>Assignment/<br>Test |
| 6-7   | 7.0 Hypothesis Tests<br>7.1 Developing Null and Alternative Hypotheses<br>7.2 Type I & Type II Error<br>7.3 Population mean<br>7.4 Population Proportion<br>7.5 Inferences About the Difference Between Two Population Means<br>7.6 Inferences About the Difference Between Two Population Proportions | Lecture/<br>Tutorial | Quizzes /<br>Assignment/<br>Test |
|       | <b>Examination 1 / Quiz</b>  |                      |                                  |
| 8-9   | 8.0 Analysis of Variance<br>8.1 One way ANOVA<br>8.2 Multiple Comparison of Means<br>8.3 Two Way ANOVA<br>(with Replication and Without Replication)   | Lecture/<br>Tutorial | Quizzes /<br>Assignment/<br>Test |
| 10-11 | 9.0 Simple Linear Regression<br>9.1 Simple Linear Regression<br>9.2 Scatter Diagram<br>9.3 Graphical Method for Determining Regression<br>9.4 Least Square Method<br>9.5 Correlation Coefficient and Coefficient Determination<br>9.6 Test of Significance   | Lecture/<br>Tutorial | Quizzes /<br>Assignment/<br>Test |
|       | <b>Examination 2 / Quiz</b>  |                      |                                  |
| 12-13 | 10.0 Non-Parametric Statistics<br>10.1 The $\chi^2$ Tests:<br>10.1.1 Goodness-of-fit Test<br>10.1.2 Independence Test<br>10.1.3 Homogeneity Test<br>10.2 Nonparametric Statistics:<br>10.2.1 Sign Test<br>10.2.2 Mann-Whitney Test<br>10.2.3 Kruskal Wallis Test                                       | Lecture/<br>Tutorial | Quizzes /<br>Assignment/<br>Test |
| 14    | 11.0 Time Series And Business Forecasting<br>11.1 Time Series Data<br>11.2 Simple moving Average Model<br>11.3 Weighted Moving Average<br>11.4 Exponential Smoothing   | Lecture/<br>Tutorial | Quizzes /<br>Assignment/<br>Test |
| 15    | <b>MINGGU ULANGKAJI / REVISION WEEK</b>  |                      |                                  |
| 16-17 | <b>PEPERIKSAAN AKHIR SEMESTER / FINAL EXAMINATION</b>  |                      | Exam                             |

*Evaluation contribution:*

Examination: **80%**

- **Final Examination** = 50%
- **Mid Term Examination (Examination 1 + Examination 2) = 30%**

Course work: **20%**

- **Quizzes / Assignments** = 20%

*List of references :*

1. Berensen, M. L., Levine, B. M. & Krehbiel, T.C. (2008). Basic Business Statistics, 11 edition, Prentice Hall.
2. Beri, G. C. (2010). Business statistics, McGraw-Hill
3. Bowerman, O. & Orris, P. (2008). Essentials of Business Statistics, 2nd edition, McGrawHill/Irwin.
4. Coakes, S. J. (2013). SPSS: Analysis Without Anguish Version 20.0 for Windows. John Wiley & sons
5. Weiers, R. M., Gray, J. B. & Peters, L. H. (2008). *Introduction to Business Statistics*, Thomson/South- Western.

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