CB2200 Business Statistics

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Course Intended Learning Outcomes

- Explain concepts in numerical descriptive measures, sampling distributions, confidence interval estimation, hypothesis testing, and simple linear regression model.
- Select appropriate statistical methods to analyse real-life business data, interpret the results and give recommendations for business decisions.
- Apply standard statistical software, such as Microsoft Excel, to analyse data arising from real-life business problems.
- Able to demonstrate the attitude to provide recommendations / innovations based on statistical data.

Assessments

Four Online Quizzes (on Week 4, 8, 10, & 13)	20%
Two Individual Assignments (Due Week 7 & 10)	25%
Tutorial Participation	5%
Examination (2 Hours)	50%

- Make-up for quizzes will NOT be arranged for any reason. If you miss any of these for any reason, the respective score will be 0.
- Late submission of individual assignments will be penalized.
- If you would like the Course Examiner to take into account the illness or other incidents that would prevent you from attending the examination, you must follow the procedure as described in Academic Regulations for Undergraduate Degrees.

Tentative Schedule

Schedule	Week
Topic 1: Introduction to Statistics • Types of variables • Organizing and visualizing data • Measures of central tendency • Measures of variation • Exploring numerical data • Use of Excel	1-2
Topic 2: Basic Probability • Basic probability concepts • Conditional probability • Counting rules	3
Topic 3: Discrete and Continuous Probability Distributions • Discrete probability distribution • Binomial distribution • Continuous probability distribution • Normal distribution	4-5
Topic 4: Sampling Distribution • Introduction to sampling distribution • Sampling distribution of the sample mean • Sampling from normal population • Sampling from non-normal population	6
Topic 5: Confidence Interval Estimation for the Population Mean • Introduction to parameter estimation • Confidence interval estimation for population mean with known standard deviation • Confidence interval estimation for population mean with unknown standard deviation • Sample size determination	7
Topic 6: Hypothesis Testing for the Population Mean • Introduction to hypothesis testing • Hypothesis testing for the population mean with known standard deviation • Hypothesis testing for the population mean with unknown standard deviation	8-9
Topic 7: Confidence Interval Estimation and Hypothesis Testing for the Population Proportion • Sampling distribution of the sample proportion • Confidence interval estimation for the population proportion • Sample size determination • Hypothesis testing for the population proportion	10
Topic 8: Simple Linear Regression • Measuring the association between two numerical variables • Simple linear regression model • Statistical significance of a linear regression model	11-12
Consultation	13

References

- Levine, D.M., Kathryn, A.S. and David, F.S. *Business Statistics: A First Course*, Latest Edition, Pearson Education Limited.
- Jeffrey O. Bennett, William L. Briggs and Mario F. Triola, *Statistical Reasoning for Everyday Life*, 4/e, 2014, Wesley
- Liu, K. I., To K. M., *Speaking of Statistics*, 2014, Pearson Education Ltd
- Newbold, P., Carlson, W.L. and Thorne, B. *Statistics for Business and Economic*. Prentice Hall
- Middleton, M.R. *Data Analysis Using Microsoft Excel.* Thomson, Brooks/Cole.

Online Resources

Statistics Glossary
http://www.stats.gla.ac.uk/steps/glossary /index.html

Statistical Universe
http://www.lib.umich.edu/govdocs/statuniv.html

STICI – A very interesting online statistics course
http://www.stat.berkeley.edu/~stark/SticiGui/Text/index.htm

HyperStat Online Statistics Textbook
http://davidmlane.com/hyperstat/