

Subject Description Form

Subject Code	AMA2101
Subject Title	Quantitative Methods for Business
Credit Value	3
Level	2
Pre-requisite / Co-requisite/ Exclusion	Nil
Role and Purposes	The lectures aim to provide the students with an integrated knowledge required for the understanding and application of mathematical concepts and techniques. To develop students' ability of logical thinking and effective communication, tutorial and presentation sessions will be held.
Subject Learning Outcomes	Upon completion of the subject, students will be able to: <ol style="list-style-type: none"> 1. use a variety of basic techniques in understanding and interpreting data. 2. apply elementary quantitative methods in analyzing business scenarios and problems. 3. think critically and creatively about the uses and limitations of quantitative methods in business. 4. use statistical package and interpret the output, appreciate the applications of information technology for quantitative analysis in business.
Subject Synopsis/ Indicative Syllabus	<p><i>Descriptive Statistics</i> Presentation of business data in tabular, diagrammatic and graphic forms; misleading presentations. Summary measures of location and spread.</p> <p><i>Probability</i> Concepts of probability. Axioms of probability. Bayes' Theorem. Random variables and expected values; uses and limitations in decision making. Common probability distributions: Binomial, Poisson and Normal.</p> <p><i>Estimation</i> Simple random samples. Sampling distributions: mean, proportion and differences. Confidence intervals: mean, proportion and differences.</p> <p><i>Hypothesis Testing</i> Hypothesis testing: mean, proportion and differences.</p> <p><i>Chi-square Test</i> Test of Goodness of Fit. Test of Independence.</p> <p><i>Relationships between Variables</i> Exploratory Data Analysis. Linear relationships: ordinary least squares. Correlation coefficients.</p> <p><i>Multiple Regression</i> Multiple Regression Equation. Inferences about Parameters. Modelling Techniques.</p> <p><i>Financial Mathematics</i> Fundamentals of compound interest. Discounted and Compounded Value. Annuities. Amortization and Sinking Funds</p>

Teaching/Learning Methodology	A two hour mass lecture will be conducted each week to initiate students into the ideas, concepts and techniques of the topics in the syllabus, which is then reinforced by a one hour tutorial designed to consolidate and develop students' knowledge through discussion and practical problem solving.																																													
Assessment Methods in Alignment with Intended Learning Outcomes	<table border="1" data-bbox="443 356 1471 943"> <thead> <tr> <th data-bbox="443 356 778 461" rowspan="2">Specific assessment methods/tasks</th> <th data-bbox="778 356 927 461" rowspan="2">% weighting</th> <th colspan="4" data-bbox="927 356 1471 461">Intended subject learning outcomes to be assessed (Please tick as appropriate)</th> </tr> <tr> <th data-bbox="927 461 1059 528">1</th> <th data-bbox="1059 461 1192 528">2</th> <th data-bbox="1192 461 1324 528">3</th> <th data-bbox="1324 461 1471 528">4</th> </tr> </thead> <tbody> <tr> <td data-bbox="443 528 778 633">a. Mid-semester test (closed book)</td> <td data-bbox="778 528 927 633">30%</td> <td data-bbox="927 528 1059 633">✓</td> <td data-bbox="1059 528 1192 633">✓</td> <td data-bbox="1192 528 1324 633">✓</td> <td data-bbox="1324 528 1471 633"></td> </tr> <tr> <td data-bbox="443 633 778 701">b. Individual Assignment</td> <td data-bbox="778 633 927 701">10%</td> <td data-bbox="927 633 1059 701">✓</td> <td data-bbox="1059 633 1192 701">✓</td> <td data-bbox="1192 633 1324 701">✓</td> <td data-bbox="1324 633 1471 701">✓</td> </tr> <tr> <td data-bbox="443 701 778 768">c. Tutorial participation</td> <td data-bbox="778 701 927 768">10%</td> <td data-bbox="927 701 1059 768">✓</td> <td data-bbox="1059 701 1192 768">✓</td> <td data-bbox="1192 701 1324 768">✓</td> <td data-bbox="1324 701 1471 768">✓</td> </tr> <tr> <td data-bbox="443 768 778 873">d. Final Examination (closed book)</td> <td data-bbox="778 768 927 873">50%</td> <td data-bbox="927 768 1059 873">✓</td> <td data-bbox="1059 768 1192 873">✓</td> <td data-bbox="1192 768 1324 873">✓</td> <td data-bbox="1324 768 1471 873">✓</td> </tr> <tr> <td data-bbox="443 873 778 943">Total</td> <td data-bbox="778 873 927 943">100 %</td> <td colspan="4" data-bbox="927 873 1471 943"></td> </tr> </tbody> </table> <p data-bbox="443 958 1471 1025">Continuous Assessment comprises of assignment, presentation during tutorials and a mid-term test. A written examination is held at the end of the semester.</p> <p data-bbox="443 1059 1471 1193">Questions used in assignment, presentation, test and examination can measure the student's level of understanding of the concept of quantitative methods and statistics, and to assess their statistical reasoning skills; as well as the ability to apply appropriate statistical techniques to model and solve problems.</p> <p data-bbox="443 1227 1471 1294">To pass this subject, students are required to obtain Grade D or above in both the Continuous Assessment and the Examination components.</p>						Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)				1	2	3	4	a. Mid-semester test (closed book)	30%	✓	✓	✓		b. Individual Assignment	10%	✓	✓	✓	✓	c. Tutorial participation	10%	✓	✓	✓	✓	d. Final Examination (closed book)	50%	✓	✓	✓	✓	Total	100 %				
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Student Study Effort Required	Class contact:																																													
	▪ Lectures					28 Hrs.																																								
	▪ Tutorials and Student Presentation					14 Hrs.																																								
	Other student study effort:																																													
	▪ Assignments					20 Hrs.																																								
	▪ Self-study					58 Hrs.																																								
	Total student study effort					120 Hrs.																																								

**Reading List and
References**

Textbook:

Levin, R.I. & Rubin, D.S. Statistics for Management Prentice-Hall
7th edition 1998

Study Guide:

Department of Applied Mathematics Quantitative Methods for Business The Hong Kong
Polytechnic University

References:

Aczel, A.D., Complete Business Statistics McGraw-Hill
7th edition 2009

Moore, D.S., McCabe, G.P. & Craig, B. Introduction to the Practice of
Statistics W H Freeman
6th edition 2007

McClave, J.T., Benson, P.G. & Sincich, T. A First Course in Business Statistics Prentice Hall
8th edition 2002