

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	<p>Upon completion of the subject, students will be able to:</p> <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="469 349 1476 920"> <thead> <tr> <th data-bbox="469 349 807 517" rowspan="2">Specific assessment methods/tasks</th> <th data-bbox="807 349 954 517" rowspan="2">% weighting</th> <th colspan="4" data-bbox="954 349 1476 443">Intended subject learning outcomes to be assessed (Please tick as appropriate)</th> </tr> <tr> <th data-bbox="954 443 1082 517">1</th> <th data-bbox="1082 443 1214 517">2</th> <th data-bbox="1214 443 1347 517">3</th> <th data-bbox="1347 443 1476 517">4</th> </tr> </thead> <tbody> <tr> <td data-bbox="469 517 807 618">a. Mid-semester test (closed book)</td> <td data-bbox="807 517 954 618">30%</td> <td data-bbox="954 517 1082 618">✓</td> <td data-bbox="1082 517 1214 618">✓</td> <td data-bbox="1214 517 1347 618">✓</td> <td data-bbox="1347 517 1476 618"></td> </tr> <tr> <td data-bbox="469 618 807 685">b. Individual Assignment</td> <td data-bbox="807 618 954 685">10%</td> <td data-bbox="954 618 1082 685">✓</td> <td data-bbox="1082 618 1214 685">✓</td> <td data-bbox="1214 618 1347 685">✓</td> <td data-bbox="1347 618 1476 685">✓</td> </tr> <tr> <td data-bbox="469 685 807 752">c. Tutorial participation</td> <td data-bbox="807 685 954 752">10%</td> <td data-bbox="954 685 1082 752">✓</td> <td data-bbox="1082 685 1214 752">✓</td> <td data-bbox="1214 685 1347 752">✓</td> <td data-bbox="1347 685 1476 752">✓</td> </tr> <tr> <td data-bbox="469 752 807 853">d. Final Examination (closed book)</td> <td data-bbox="807 752 954 853">50%</td> <td data-bbox="954 752 1082 853">✓</td> <td data-bbox="1082 752 1214 853">✓</td> <td data-bbox="1214 752 1347 853">✓</td> <td data-bbox="1347 752 1476 853">✓</td> </tr> <tr> <td data-bbox="469 853 807 920">Total</td> <td data-bbox="807 853 954 920">100 %</td> <td data-bbox="954 853 1082 920"></td> <td data-bbox="1082 853 1214 920"></td> <td data-bbox="1214 853 1347 920"></td> <td data-bbox="1347 853 1476 920"></td> </tr> </tbody> </table> <p data-bbox="469 920 1476 1010">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="469 1010 1476 1167">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="469 1167 1476 1256">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	26 Hrs.																																										
	▪ Tutorials and Student Presentation	13 Hrs.																																										
	Other student study effort:																																											
	▪ Assignments	20 Hrs.																																										
	▪ Self-study	58 Hrs.																																										
	Total student study effort		117 Hrs.																																									
Reading List and References	<p data-bbox="469 1727 1476 1794"><u>Textbook:</u></p> <p data-bbox="469 1794 1476 1883">Levin, R.I. & Rubin, D.S. Statistics for Management Prentice-Hall 7th edition 1998</p> <p data-bbox="469 1883 1476 1951"><u>Study Guide:</u></p> <p data-bbox="469 1951 1476 2085">Department of Applied Mathematics Quantitative Methods for Business The Hong Kong Polytechnic University</p>																																											

References:

Aczel, A.D.,	Complete Business Statistics 7 th edition	McGraw-Hill 2009
Moore, D.S., McCabe, G.P. & Craig, B.	Introduction to the Practice of Statistics 7 th edition	W H Freeman 2012
McClave, J.T., Benson, P.G. & Sincich, T.	A First Course in Business Statistics 8 th edition	Prentice Hall 2002