

## The Hong Kong Polytechnic University

### Subject Description Form

Please read the notes at the end of the table carefully before completing the form.

<b>Subject Code</b>	APSS 6003																	
<b>Subject Title</b>	Advanced Quantitative Methods																	
<b>Credit Value</b>	3																	
<b>Level</b>	6																	
<b>Pre-requisite / Co-requisite/ Exclusion</b>	Nil																	
<b>Assessment Methods</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 20%; text-align: center;">Individual Assessment</th> <th style="width: 20%; text-align: center;">Group Assessment</th> </tr> </thead> <tbody> <tr> <td>1. Data Analysis Report</td> <td style="text-align: center;">45 %</td> <td style="text-align: center;">-</td> </tr> <tr> <td>2. Seminar presentation</td> <td style="text-align: center;">5 %</td> <td style="text-align: center;">-</td> </tr> <tr> <td>3. Seminar participation</td> <td style="text-align: center;">5 %</td> <td style="text-align: center;">-</td> </tr> <tr> <td>4. Term Paper</td> <td style="text-align: center;">45 %</td> <td style="text-align: center;">-</td> </tr> </tbody> </table>				Individual Assessment	Group Assessment	1. Data Analysis Report	45 %	-	2. Seminar presentation	5 %	-	3. Seminar participation	5 %	-	4. Term Paper	45 %	-
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<p>The followings apply to the overall grade :</p> <ul style="list-style-type: none"> <li>• The grade is calculated according to the percentage assigned;</li> <li>• The completion and submission of all component assignments are required for passing the subject; and</li> <li>• Student must pass the specific component(s) (standard of passing) if he/she is to pass the subject.</li> </ul>																		
<b>Objectives</b>	<p>This subject aims at helping students to develop an advanced understanding of methodological issues in designing and carrying out quantitative research. It will also redress some of the common misconceptions of quantitative research which students may have. It attempts to develop students' ability to appraise major quantitative research methods and select the appropriate statistical analysis methods to address various types of research questions, including the ones which are related to their own research projects.</p>																	
<b>Intended Learning Outcomes</b> (Note 1)	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> <li>a. appreciate better different methodological issues of major quantitative research methods;</li> <li>b. appraise critically research reports which use quantitative research methods and statistical analyses;</li> <li>c. position their own research projects and devise different quantitative</li> </ol>																	

	<p>research designs;</p> <p>d. assess the appropriateness of different quantitative research methods to answer different research questions;</p> <p>e. develop a research plan for their own projects using quantitative research methods.</p>																																								
<p><b>Subject Synopsis/ Indicative Syllabus</b> (Note 2)</p>	<ol style="list-style-type: none"> <li>Debates on the use of quantitative methods in social science research;</li> <li>Relevance of quantitative research methods in addressing research questions;</li> <li>Issues in designing quantitative research methods -- sample size, sampling methods, response rate, non-response biases, development of instruments for data collection;</li> <li>Proper use of statistical analyses to address research questions and build up arguments;</li> <li>Use common statistical methods -- inferential statistics, factor analysis, difference of means tests, major statistical model building methods.</li> </ol>																																								
<p><b>Teaching/Learning Methodology</b> (Note 3)</p>	<p>The course will use local and international case materials as illustrations. Thematic classroom lectures will be delivered and supplemented by workshops and seminars. Students are required to give a seminar to highlight the appropriateness of quantitative methods of their own research projects; or to present their appraisal of a quantitative research related to their own research area. Where necessary, workshops will be arranged to allow them to get familiarize with a range of commonly used statistical analysis methods.</p>																																								
<p><b>Assessment Methods in Alignment with Intended Learning Outcomes</b> (Note 4)</p>	<table border="1"> <thead> <tr> <th rowspan="2">Specific assessment methods/tasks</th> <th rowspan="2">% weighting</th> <th colspan="5">Intended subject learning outcomes to be assessed (Please tick as appropriate)</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> <th>e</th> </tr> </thead> <tbody> <tr> <td>Data Analysis report</td> <td>45%</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Seminar presentation and participation</td> <td>10%</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Term Paper</td> <td>50 %</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Total</td> <td>100 %</td> <td colspan="5"></td> </tr> </tbody> </table> <p>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</p> <p><i>Data Analysis Report</i> Students are expected to understand and conduct a multivariate data analysis method and write up the results into a report.</p> <p><i>Seminar Presentations</i> Students are expected to give a seminar presentation to demonstrate their appraisal of a major quantitative study (local or international) related to</p>	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)					a	b	c	d	e	Data Analysis report	45%	✓	✓	✓	✓	✓	Seminar presentation and participation	10%	✓	✓	✓	✓	✓	Term Paper	50 %	✓	✓	✓	✓	✓	Total	100 %					
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	<p>their research interest.</p> <p><i>Essay</i> Students are required to submit an individual paper of about 3,000 words elaborating the appraisal they give in the seminar, or on the quantitative methods they develop for their research. The paper will have to cover (a) their research questions and (b) proposed research methods and justifications.</p>	
<b>Student Study Effort Expected</b>	Class contact:	
	▪ Lecture	26 Hrs.
	▪ Seminar	12 Hrs.
	Other student study effort:	
	▪ Seminar Presentation	20 Hrs.
	▪ Individual Essay	20 Hrs.
	• Self-study	33 Hrs
Total student study effort	115 Hrs.	
<b>Medium of Instruction</b>	English	
<b>Medium of Assessment</b>	English	
<b>Reading List and References</b>	<p><b><u>Essential</u></b></p> <p>De Vaus, D.A. (Ed.) 2006. <i>Research design. Volumes one to four</i>. London: Sage Publication.</p> <p>Gallin, John I. and F.P. Ognibene. 2012. <i>Principles and practice of clinical research</i>. Oxford : Academic.</p> <p>Harkness, Janet. et al. (eds.) 2010. <i>Survey Methods in multinational, multiregional, multicultural context</i>. Chichester, West Sussex : John Wiley and Sons. Inc.</p> <p>King, G., Rosen, O., and Tanner, M.A. 2004. <i>Ecological inference: new methodological strategies</i>. Cambridge, UK; New York: Cambridge University Press.</p> <p>Imbens, Guido W. and Donald B. Rubin. 2015. <i>Causal Inference for Statistics, Social and Biomedical Sciences : an introduction</i>. New York : Cambridge University Press.</p>	

	<p>Marsden, Peter V. and James D. Wright (eds). 2<sup>nd</sup> edition. 2010. <i>Handbook of Survey Research</i>. Bingley, U.K. : Emerald.</p> <p>Morgan, S. L. and Winship. C. 2007. <i>Counterfactuals and causal inference</i>. New York: Cambridge University Press.</p> <p>Tabachnick, B.G. and Fidell, L.S. 2013. <i>Using multivariate statistics</i>. (6<sup>th</sup> ed.) Boston: Allyn &amp; Bacon.</p> <p><b><u>Supplementary</u></b></p> <p>Gerber, Alan S. and Donald P. Green. 2012. <i>Field experiments : design, analysis and interpretation</i>. New York : W.W. Norton and Company.</p> <p>Hair, Joseph F. 2010. <i>Multivariate data analysis</i>. Upper Saddle River, NJ : Prentice Hall/Pearson.</p> <p>Sage University Paper Series: <i>Quantitative Applications in the Social Science</i>.</p>
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Note 1: Intended Learning Outcomes

Intended learning outcomes should state what students should be able to do or attain upon completion of the subject. Subject outcomes are expected to contribute to the attainment of the overall programme outcomes.

Note 2: Subject Synopsis/ Indicative Syllabus

The syllabus should adequately address the intended learning outcomes. At the same time over-crowding of the syllabus should be avoided.

Note 3: Teaching/Learning Methodology

This section should include a brief description of the teaching and learning methods to be employed to facilitate learning, and a justification of how the methods are aligned with the intended learning outcomes of the subject.

Note 4: Assessment Method

This section should include the assessment method(s) to be used and its relative weighting, and indicate which of the subject intended learning outcomes that each method purports to assess. It should also provide a brief explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes.