

**The Hong Kong Polytechnic University
Hong Kong Community College**

Subject Description Form

Subject Code	CCN2277
Subject Title	Survey Design and Analysis
Level	2
Credit Value	3
Medium of Instruction	English
Pre-requisite / Co-requisite/ Exclusion	Pre-requisite CCN2311 Foundations of Data Science OR CCN2031 Statistics
Objectives	This subject aims to introduce to the students the basic concepts of survey sampling theory including brief introduction to questionnaire design, methods of sample selection, estimation, sampling variance, standard error of estimation in finite population, development of sampling theory for use in sample survey problems and sources of errors in surveys. Practical examples will be used to illustrate the principles and methods.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: (a) understand and interpret real-life survey reports from public agencies. (b) understand concepts and techniques in sampling methods. (c) assess the appropriateness of sampling plans with special reference to survey goals, sampling frames availability, and resource constraints. (d) understand solution methodology to estimate population parameters for sampling plans. (e) conduct sample surveys within the context of socially acceptable professional and ethical practices.
Subject Synopsis/ Indicative Syllabus	Basic Concepts of Survey Sampling Types of sampling errors; Sampling and complete enumeration; Principal steps in a sample survey; Terms and definitions in sample surveys.

	<p>Questionnaire Design Types of questions; Ordering of questions; Wording of questions.</p> <p>Sample Design, Methods and Theory Non-probability sampling; Simple random sampling; Stratified random sampling; Systematic random sampling; Varying probability sampling; Ratio and regression estimation; Cluster random sampling; Multi-stage sampling.</p> <p>Types of Errors and Biases Non-sampling errors; Response and non-response errors; Measurement errors; Control of errors; Bias/variance trade off.</p> <p>Current Practices General household survey; Census; By-census; Household expenditure survey.</p> <p>Ethics Professionalism; Responsibilities; Obligations; Roles.</p>																																																													
<p>Teaching/Learning Methodology</p>	<p>Lectures will focus on the introduction and explanation of concepts and theories supported by hypothetical and real examples wherever appropriate.</p> <p>Tutorials will provide students with the opportunity to practise their newly learnt concepts through case studies and numerical examples.</p>																																																													
<p>Assessment Methods in Alignment with Intended Learning Outcomes</p>	<p>A variety of assessment tools will be used to develop and assess students' achievement of the subject intended learning outcomes.</p> <table border="1" data-bbox="507 1205 1388 1886"> <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</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> <th>e</th> </tr> </thead> <tbody> <tr> <td>Continuous Assessment*</td> <td>40</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>▪ Test</td> <td>20</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>▪ Assignment 1</td> <td>8</td> <td></td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> </tr> <tr> <td>▪ Assignment 2</td> <td>8</td> <td></td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> </tr> <tr> <td>▪ Participation</td> <td>4</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Final Examination</td> <td>60</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Total</td> <td>100</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p><i>*Continuous assessment items and/or weighting may be adjusted by the subject team subject to the approval of the College Programme Committee.</i></p> <p>To pass this subject, students are required to obtain Grade D or above in both the Continuous Assessment and Final Examination.</p>	Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed					a	b	c	d	e	Continuous Assessment*	40						▪ Test	20	✓	✓	✓	✓	✓	▪ Assignment 1	8		✓	✓	✓		▪ Assignment 2	8		✓	✓	✓		▪ Participation	4	✓	✓	✓	✓	✓	Final Examination	60	✓	✓	✓	✓	✓	Total	100					
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Final Examination	60	✓	✓	✓	✓	✓																																																								
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Student Study Effort Expected	Class contact	Hours
	▪ Lecture	26
	▪ Tutorial	13
	Other student study effort	
	▪ Self-study	52
	▪ Continuous Assessment	39
	Total student study effort	130
Reading List and References	<p>Recommended Textbook</p> <p>Scheaffer, R. L., Mendenhall, W., Ott, R. L. & Gerow, K. G. (2011). <i>Survey sampling</i>. (7th ed.), Cengage Learning.</p> <p>References</p> <p>Cochran, W. G. (1977). <i>Sampling techniques</i>. (3rd ed.), Wiley.</p> <p>Kish, L. (1995). <i>Survey sampling</i>. Wiley.</p> <p>Thompson, S. K. (2002). <i>Sampling</i>. (2nd ed.), Wiley.</p>	