

## SUBJECT DESCRIPTION FORM

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Subject Title: Survey Sampling

Subject Code: AMA264

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Pre-requisite: Nil

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Objectives:

To introduce the students the basic concepts and methods of survey sampling including methods of data collection, questionnaire design, methods of sample selection, estimation, sampling and non-sampling errors in surveys. Ample practical examples will be used to illustrate the principles and methods with special reference to investment science.

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Learning Outcome:

Upon satisfactory completion of the subject, students should be able to:

1. design sample surveys for investment science;
  2. master knowledge and techniques in sampling methods;
  3. formulate sampling plans with special reference to survey goals, sampling frames availability, and resource constraints;
  4. assess critically the appropriateness of competing sampling plans;
  5. estimate population parameters;
  6. conduct sample surveys within the context of socially acceptable professional and ethical practices;
  7. communicate effectively in a well-structured manner and build up an open-minded attitude;
  8. understand the ethical and social responsibility of a sample survey professional.
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Learning Approach:

Lecture	28 hours
Tutorial	14 hours
Total	<u>42 hours</u>

The learning outcomes will be achieved through a combination of lectures, tutorials, interactions between the lecturers and students, assignments, mini-projects, tests and final examination.

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Assessment:

Continuous Assessment	40%
Examination	60%
Total	<u>100%</u>

The learning outcomes will be assessed by a combination of assignments, mid-term tests, mini-projects and the final examination.

To pass this subject, students are required to obtain Grade D or above in both the Continuous Assessment and the Examination components.

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Syllabus:

*Basic Concepts of survey sampling*

Population and sample, need for sample survey, methods of data collection, questionnaire design, sampling and non-sampling errors. (3 hours)

*Sample Design, Methods and Theory*

Simple random sampling, stratified random sampling, double sampling, systematic random sampling, sampling with probability proportional to size, cluster sampling with equal cluster size, systematic sampling, ratio and regression estimation, cluster sampling with unequal cluster size, two-stage and multi-stage sampling. (21 hours)

*Types of Errors and Biases*

Non-sampling errors, response and non-response errors, measurement and control of errors. (6 hours)

*Current practices*

General Household Survey, Census, By-census, Household Expenditure Survey. (6 hours)

*Ethics*

Professionalism, responsibilities, obligations, roles. (6 hours)

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Textbook:

Scheaffer, R. L., Menderhall W., & Ott L.	Elementary Survey Sampling	Duxbury Press, 2005
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References:

Thompson, S.K.	Sampling, 2 <sup>nd</sup> edition	Wiley, 2002
Census and Statistics Dept.	Hong Kong Monthly Digest of Statistics	Hong Kong Government Printer, various years
American Statistical Association	Ethical Guidelines for Statistical Practice	ASA, 1999
Levy, P.S. and Lemeshow, S	Sampling of Populations: Methods and Applications, 3 <sup>rd</sup> edition	Wiley, 1999
Kish, L.	Survey Sampling	Wiley, 1995
Hansen, M.H., Hurwitz, W.N. and Madow, L.H.	Sample Survey Methods and Theory, Vol. I & II	Wiley, 1993
International Statistical Institute	Declaration of Professional Ethics	ISI, 1985