

## East Asia Training & Consultancy Pte Ltd

Head Office: Singapore

Regional Offices: Malaysia, Indonesia, Thailand, Philippines, Vietnam, Hong Kong

Fax : (65)-62506369 Tel: (65)-62199062

Email : [enquiry@eastasiatc.com.sg](mailto:enquiry@eastasiatc.com.sg)

Website: [www.eastasiatc.com.sg](http://www.eastasiatc.com.sg)

# Statistics III

## 2-Day Professional Development Seminar

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### SEMINAR DESCRIPTION

In this Statistics III seminar, we will learn about sampling and sampling distributions, Statistical Inference, Testing of Hypothesis and Experimental Designs.

There will be a morning & afternoon tea/coffee breaks with snacks (10:00 am and 3:00pm) and a networking power luncheon (from 12:00 to 13:00pm)

### REVIEW AND BACKGROUND

A prerequisite for this class is Statistics II, or equivalent. Some review will be provided in class, if required.

### SEMINAR OUTLINE\*

\*(subject t to minor changes)

#### DAY 1: Morning

#### Sampling and Sampling Distributions

- Introduction to Sampling
- Finite and Infinite Population
- Sampling Fraction
- Complete Count and Population Census
- Sample Survey and Advantages of Sampling
- Limitations of Sampling
- Sample Design and Sampling Frame
- Equal Probability and Nonzero Probability

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### DAY 1:Afternoon

#### Sampling and Sampling Distributions

- Probability and Nonprobability Sampling
- Sampling With Replacement
- Sampling Without Replacement
- Simple Random Sampling
- Sampling Errors
- Non Sampling Errors
- Sampling Distribution
- Examples of Sampling Distribution

### DAY 2: Morning

#### Statistical Inference & Testing of Hypothesis

- Statistical Inference
- Statistical Hypothesis
- Null Hypothesis
- Alternative Hypothesis
- Accept and Reject Null Hypothesis
- Simple Hypothesis and Composite Hypothesis
- Test Statistic
- Acceptance and Rejection Regions
- Two Tailed Test
- One Tailed Test
- Type 1 Error and Type 2 Error

### DAY 2: Afternoon

#### Experimental Designs

- Introduction to Experimental Designs
- Basic Principles of Experimental Designs
- Completely Randomized Design
- Practical Exercises