

## 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 II

## 2-Day Professional Development Seminar

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### SEMINAR DESCRIPTION

We live in the information age. We are bombarded with information everyday.

Most often that information is summarized in a numerical form like percentages. We use such information to make important decisions like:

- Which brand to buy
- Which schools to go
- What foods to eat
- Which pharmaceuticals to use or medical treatments to undergo.

Therefore we need to become savvy consumers of information presented in these numerical forms.

Information in numerical form is called **data**.

**Statistics** is the science of handling data including:

- Collecting data
- Organizing data
- Understanding and interpreting data

In order to make informed decisions based on information in statistical form, we need to be able to discern the meaning and trustworthiness of the statistics.

In this Statistics II seminar, we will learn about Index numbers, regression and correlation, probability and random variables and probability distributions.

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 I, or equivalent. Some review will be provided in class, if required.

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### SEMINAR OUTLINE\*

\*(subject to minor changes)

#### DAY 1: Morning

##### Index Numbers

- Index Numbers and Types of Index Numbers
- Uses of Index Numbers
- Limitations of Index Numbers
- Construct Price Index Numbers
- Fixed Base Method
- Chain Base Method
- Unweighted Index Numbers
- Weighted Index Numbers
- Wholesale Price Index Numbers
- Consumer Price Index Numbers
- Methods of Consumer Price Index Numbers

#### Day 1: Afternoon

##### Regression and Correlation

- Introduction to Regression and Correlation
- Linear Model
- Non Linear Model
- Cause and Effect Relation
- Scatter Diagram
- Correlation
- Linear and Non Linear Correlation
- Positive and Negative Correlation
- Perfect Correlation
- Coefficient of Correlation
- Properties of Coefficient of Correlation
- Examples of Correlation
- Curve Fitting and Method of Least Squares
- Example Method of Least Squares
- Linear Regression
- Properties of the Regression Line

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### DAY 2 :Morning

#### Probability

- Introduction to Probability
- Random Experiment
- Sample Space
- Event of Probability
- Equally Likely Outcomes
- Mutually Exclusive Events
- Not Mutually Exclusive Events
- Exhaustive and Complementary Events
- Reduced Sample Space
- Relative Frequency
- Definition of Probability
- Subjective Probability

### DAY 2 :Afternoon

#### Random Variable and Probability Distributions

- Generation of Random Numbers
- Application of Random Numbers
- Examples of Random Numbers
- Random Variable
- Discrete Random Variable
- Continuous Random Variable