

# Philippine Statistical Association Inc.

**Training Title:** Statistics and Probability for K to 12 Teachers

**Date:** May 15 to 19, 2017 (5 days)

**Venue:** School of Statistics, University of the Philippines Diliman

## COURSE DESCRIPTION

Deals with all topics in statistics and probability included in the K to 12 curriculum. The course focuses on ways to understand and appreciate the use of the different statistical tools and how to teach effectively the different statistical methodologies covering both descriptive and inferential statistics.

The course include lectures, where concepts and methods are presented, discussed and applied on real data using manual computation and software like MS Excel and a freeware; interaction with participants where questions and clarifications are discussed; hands-on computer exercises, and group/workshop outputs.

### Who can participate?

Recommended for teachers who are involved in teaching statistics and probability to students in all levels of K to 12. Background in statistics is not necessary but would be helpful.

### What will participants gain?

The course shall equip teachers with sound knowledge on topics like data collection, sampling techniques, data organization, data presentation, summary measures, probability, probability distribution, sampling distribution, estimation, hypothesis testing, and regression analysis. Emphasis is more on the properties of the statistical techniques and interpretation of results. Participants shall be able to determine which statistical tool is most appropriate for a given data set and when is the tool applicable.

Manual computation and use of software will be both tackled. A free software will be introduced to help teachers teach with ease both tools in descriptive and inferential statistics.

### Course Coverage

- Introduction to Statistical Concepts
- Methods of Data Collection
  - Survey, Observation, Experiment
- Sampling and Sampling Techniques
  - Probability and Nonprobability
- Graphical Methods of Presenting Data
  - Line, Bar Chart, Pie Chart
- Methods of Organizing Data
  - Array, Frequency Distribution
- Measures of Central Tendency
  - Mean, Median, Mode
- Measures of Dispersion
  - Range, Standard Deviation, Coefficient of Variation, Z-score
- Probability
  - Random Experiments, Sample Spaces, Events
  - Properties of Probabilities
- Random Variables and Probability Distributions
  - Concept of a Random Variable
  - Discrete and Continuous Random Variables
  - Expected Values
  - The Normal Distribution
- Sampling Distribution
- Estimation
  - Basic Concepts
  - Estimating the Mean
  - Estimating Proportions
  - Sample Size Determination
- Tests of Hypothesis
  - Basic Concepts
  - Testing a Hypothesis on the Population Mean
  - Testing a Hypothesis on Proportions
- Correlation and Regression Analysis