

## Course Syllabus

- 1. Name of Curriculum** Bachelor of Science Program  
Mahidol University International College
- 2. Course Code** ICSC 333      **Course Title** Statistics for Research
- 3. Number of Credits** 4 (4-0) (Lecture-Lab)
- 4. Prerequisites** ICNS 102
- 5. Type of Course** Core course
- 6. Semester/ Academic Year** 1<sup>st</sup> and 3<sup>rd</sup> trimester/ every year

### 7. Course Description

Design of experiments, collection of data, presentation of data, descriptive statistics, elementary probability, normal distributions, estimation of parameters, hypothesis testing, analysis of variance, regression and correlation, analysis of frequencies, and non-parametric methods.

### 8. Course Objectives

At the end of course, the students are expected to be able to

Perform data summarization and interpret the value

Compute sample size estimation

Compute and interpret Chi square test, t-test, Z test, Correlation, simple regression and One way ANOVA

Present the result obtain from the test

### Course Outline

Week	Title		Instructor
	Lecture	Hour	
1	- Method of Data Summarization - Probability concept and probability distribution	4	Dr Junya
2	- Distribution of the sampling mean - Estimation	4	Dr Junya
3	- How to set up Hypothesis testing - Goodness of fit test	4	Dr Junya
4	- Hypothesis Testing for one sample group I - Hypothesis Testing for one sample group II - Hypothesis Testing for two sample I	4	Dr Junya
5	Mid-term Exam	4	Dr Junya
6	- Hypothesis Testing for two sample II - Hypothesis	4	Dr Junya

	Testing for two sample group III		
7	- Hypothesis Testing for more than two sample group I - Hypothesis Testing for more than two sample group II	4	Dr Junya
8	- Hypothesis Testing for more than two sample group III - Hypothesis Testing for association I	4	Dr Junya
9	- Hypothesis Testing for association II - Regression I	4	Dr Junya
10	- Regression II - Sampling technique	4	Dr Junya
11	- Sample size estimation - Method of presenting the test	4	Dr Junya
12	Final examination		
	<b>Total</b>	<b>44</b>	

### 10. Teaching Methods

Lecture and demonstrate from the real data set for both computing from formula and from statistical software

Problem sets are given to practice in class

### 11. Teaching Media

LCD projectors, Computer and whiteboard

### 12. Course Achievement

=>90	A
85-89	B+
80-85	B
70-79	C+
60-69	C
55-59	D+
50-54	D
<50	F

### 13. Course Evaluation

1. Mid-term examination	25%
2. Weekly Quiz	20%
Assignments	15%
Final examination	40%
<b>Total</b>	<b>100%</b>

### 14. Reference

Bluman AG Elementary Statistics: A Step by Step Approach McGraw Hill Nov 2000 (Recommended)

Woolson RF and Clarke WR Statistical Methods for the Analysis of Biomedical Data. 2<sup>nd</sup> ed. Wiley & Sons 2002.

Schork MA and Ramington RD Statistics with Applications to the Biological and Health Sciences. 3<sup>rd</sup> ed. Prentice Hall 2000.

**15. Instructor**

Assistant Professor Dr. Uunya Pattaraarchchai

**16. Course Coordinator**

Assistant Professor Dr. Uunya Pattaraarchchai

Office: Research Center

Faculty of Medicine, Thammasart University, Rangsit Campus