Course Syllabus

Adjunct Professor: Marcello Pagano

Course	Biostatistics: Principles of Biostatistics		
Credit	1	Method of Teaching	Lecture

Objective

After the successful completion of this course, students will understand the fundamental principles and methods of biostatistics, together with an understanding of how to use Stata.

Outline

This course uses the computer package Stata. Instruction will be provided for students to obtain a good and working understanding of this software. Stata will be available on the computers in the labs at Teikyo University.

1. Be a critical consumer of the public health and medical literature by describing the basic principles of quantitative methods, especially inference.
2. Analyze a valid and efficient study to address a research question.
3. Describe the use of random variables, measurement scales, descriptive statistics, probability distributions, and sampling.
4. Describe life tables.
5. Apply the fundamentals of probability theory.
6. Apply inferential methods, including developing hypotheses, constructing and describing confidence intervals, defining study outcomes and explanatory factors, and sample size calculations
7. Apply and interpret methods for the analysis of tabular and discrete data (contingency tables).
8. Be introduced to methods forregression analyses.

Class Schedule : There will be eight 90 minutes classes, two each morning, In the afternoons there will be three optional 120 minute Labs that will lead to a fuller understandingof the material for students to familiarize themselves with Stata and to get practical experience with data anlyses. The last afternoon is set aside for the final exam.

1. CLASS: Introduction, Scope. (Wed., 13 Jan., 9:00-10:30)

2. CLASS: Data Summaries. (Wed., 13 Jan., 11:00-12:30)

LAB: Introduction To Stata (Wed., 13 Jan., 14:00-16:00)

3. CLASS: Probability, Diagnostic Tests (Thu., 14 Jan., 9:00-10:30)

4. CLASS: Inference Confidence Intervals (Thu., 14 Jan., 11:00-12:30)

LAB: Stata and Inference 1 (Thu., 14 Jan., 14:00-16:00)

5. CLASS: Inference, Hypothesis Testing, Sample Sizes (Fri., 15 Jan., 9:00-10:30)

6. CLASS: Inference on Proportions (Fri., 15 Jan., 11:00-12:30)

LAB: Stata and Inference 2 (Fri., 15 Jan., 14:00-16:00)

7. CLASS: Linear Regression (Sat., 16 Jan., 9:00-10:30)

8. CLASS: Regression (continued) (Sat., 16 Jan., 11:00-12:30)

Exam: (Sat., 16 Jan., 13:30-14:30)

We may add seminars by Japanese teachers for each to assist students with difficulty in language/background knowledge.

Text

Principles of Biostatistics‐ *Second Edition.*, Marcello Pagano, Kimberlee Gauvreau, Duxbury Press 2000.

There is a textbook that has been translated into Japanese.

Related readings

Will be made available prior to the lecture.

Achievement evaluation

There will be a written final exam about conternts in the class upon completion of the course.