COURSE DETAIL

COMPUTING IN EPIDEMIOLOGY AND BIOSTATISTICS

Country
Taiwan

Host Institution
National Taiwan University

Program(s)
National Taiwan University

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Statistics

UCEAP Course Number
103

UCEAP Course Suffix

UCEAP Official Title
COMPUTING IN EPIDEMIOLOGY AND BIOSTATISTICS

UCEAP Transcript Title
EPID BIOSTAT COMPUT

UCEAP Quarter Units
3.00

UCEAP Semester Units
2.00

Course Description

This is a non-synchronous online course taught in English. This course aims to inspire students' interests in numerical computation regarding epidemiology and biostatistic, cultivating students' critical thinking and logic in programming. The course expects to facilitate students' research in biostatistics, epidemiology, or related quantitative fields and build students' further understanding of quantitative epidemiology and biostatistics.

In most biostatistics courses, instructors usually introduce theoretical models and then analyze data with statistical software such as SAS and R. However, there is a black box between these two parts. To link statistical theory to software output, this course introduces the numerical computation process involved in statistical models. The course instructs on matrix operations, numerical analyses, Monte Carlo simulations, etc. The course also teaches how to construct a log-likelihood function according to a statistical distribution; obtain maximum likelihood estimates from a logistic regression and a Poisson regression; find exact confidence intervals, and design Monte Carlo simulations for a given research topic, etc.

Prerequisite: At least one course in biostatistics (or statistics) or epidemiology.

Language(s) of Instruction
English

Host Institution Course Number
HDAS5003

Host Institution Course Title
COMPUTING IN EPIDEMIOLOGY AND BIOSTATISTICS

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department
Distance Learning

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