The Hebrew University of Jerusalem

Syllabus

How (not) to lie with statistics - 52910

Last update 04-10-2019

HU Credits: 2

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: Statistics

Academic year: 0

Semester: 2nd Semester

Teaching Languages: Hebrew

Campus: E. Safra

Course/Module Coordinator: Sarit Agami

Coordinator Email: sarit.agami@mail.huji.ac.il

Coordinator Office Hours:

Teaching Staff:

Dr. Sarit Agami

Course/Module description:
The course presents common mistakes in statistics that sometimes seem negligible but can lead to incorrect conclusions. The possible errors may begin with the data collection phase, and continue with the visual presentation of the data or the description of the data by means of measures, till the statistical inference from the sample to the population.

Course/Module aims:

Learning outcomes - On successful completion of this module, students should be able to:
To learn how to avoid the common mistakes in statistics over its three steps, that is, in sampling, description statistics and statistical inference.

Attendance requirements(%):

Teaching arrangement and method of instruction:

Course/Module Content:
I. Sampling and the data collection
* Representative sample
* Sample size
* Non-response in selected sample
* Surveys and questionnaires
* How data is collected
* Validation and reliability of measurements
* Measurement error
II. Descriptive statistics
* Calculation of average and percentages
* Validation of measures
* Natural variation
* Regression to the mean
* Reporting percentages based on incorrect conditional probability
* Correct graphs
* Correlation and causality
* Outliers

III. Research design
* Experimental research versus observational research
* Random sampling and random allocation of units for treatment

Required Reading:
 None

 Additional Reading Material:

 Grading Scheme:

Additional information: