האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

STATISTICAL INFERENCE AND EXPERIMENTAL DESIGN - 71026

Last update 07-05-2024

HU Credits: *4*

Degree/Cycle: *1st degree (Bachelor)*

Responsible Department: *Environmental Economics & Management*

Academic year: *0*

Semester: *2nd Semester*

Teaching Languages: *Hebrew*

Campus: *Rehovot*

Course/Module Coordinator: *Dr. Dizza Bursztyn*

Coordinator Email: *dizza.bursztyn@mail.huji.ac.il*

Coordinator Office Hours: *Tuesday 11-12*

Teaching Staff:
Dr. Dizza Bursztyn,
Mr. tomer yaari,
Dr. hadas Don

Course/Module description:
During the course we shall learn:
Statistical inference for the mean of one population and for the difference of means in two populations. Design of experiments.
One way and two way analysis of variance. Correlation and regression.
Chi square test for goodness of fit and for independence. Applying JMP software.

Course/Module aims:
Learning of basic statistical tools in order to analyse simple researches and in order to understand statistical analysis performed in publications.
Acquisition of basic knowledge in probability, descriptive statistics and statistical inference.
Learning to use JMP software in data analysis.

Learning outcomes - On successful completion of this module, students should be able to:
Implement statistical inference methods in the analysis of simple researches.
Use descriptive statistics and graphical presentation in order to describe and summarize data.
Solve basic probability problems.
Know to use JMP software in data analysis.

Attendance requirements(%):
100

Teaching arrangement and method of instruction: Lectures, frontal exercise, homework

Course/Module Content:
Statistical inference: basic definitions, confidence interval and hypothesis testing for a single mean for known variance (z-test).
Statistical inference for a single mean for unknown variance (t-test). Design of experiments.Statistical inference for difference of means in paired and independent samples.One-way analysis of variance and multiple comparisons. Experiments in

randomized blocks. Two way analysis of variance and interaction.
Correlation and linear regression.
Chi-square test for goodness of fit and for independence.

Required Reading:
Leviatan and Raviv: Introduction to probability and statistics (vol 2): Probability and Statistical Inference.
Eizenbach Ronit: Statistics for non-statisticians.
Marani: Methods for design and performing experiments.

Additional Reading Material:
Open University: Introduction to probability and statistics, units 1-14.
Sall: JMP Start Statistics

Grading Scheme:
Written / Oral / Practical Exam 80 %
Essay / Project / Final Assignment / Home Exam / Referat 10 %
Submission assignments during the semester: Exercises / Essays / Audits / Reports / Forum / Simulation / others 10 %

Additional information:
A test in will be held at the beginning of the semester on the subjects learned in course 71025