



The Hebrew University of Jerusalem

Syllabus

Applied Statistics - 55810

Last update 03-11-2024

HU Credits: 3

Degree/Cycle: 2nd degree (Master)

Responsible Department: Business Administration

Academic year: 0

Semester: 1st Semester

Teaching Languages: Hebrew

Campus: Mt. Scopus

Course/Module Coordinator: Dr. Antonio Castellanos

Coordinator Email: hezi.resheff@gmail.com

Coordinator Office Hours: Wednesday 17:00

Teaching Staff:

Dr. Yehezkel Resheff,
Dr. Antonio Castellanos

Course/Module description:

This course will cover the fundamentals of statistical analysis and reasoning, together with hands-on business oriented application using Python. This is a graduate level statistics for non-statisticians course, with an emphasis on data science and connections between the classical topics in statistics and their manifestation in current machine learning methods. Examples and application will primarily concern topics relevant to MBA students.

Course/Module aims:

Understand how to use statistical tools to solve research and business problems. Decide which tool is most appropriate for a given problem. Be able to understand and critically analyze the statistical work presented by others.

Learning outcomes - On successful completion of this module, students should be able to:

On successful completion of this course, students should be able to identify the proper statistical analysis approach for a given data set and research question, and apply it using Python. This should be done by either using one of the models learned in class, finding some other models in the literature, or developing a method of their own.

Attendance requirements(%):

Teaching arrangement and method of instruction: Lectures, assignments, and final written exam.

Course/Module Content:

- Introduction to probability.*
- Introduction to statistics.*
- Causality vs prediction.*

Simple linear regression.

- *Multiple linear regression*
- *Logistic regression*
- *Experiments*
- *Instrumental variable regression*

Required Reading:

Textbooks:

1. *James, Witten, Hastie, Tibshirani, Taylor (2023), An introduction to statistical learning with applications in python. Springer.*
2. *Stock, Watson (2020) Introduction to Econometrics. Fourth Edition. Pearson.*

Additional Reading Material:

*Charles Wheelan (2014)
Naked Statistics. W. W. Norton & Company.*

Grading Scheme:

*Written Exam % 55
Active Participation / Team Assignment 10 %
Submission assignments during the semester: Exercises / Essays / Audits / Reports
/ Forum / Simulation / others 35 %*

Additional information:

למען הסר ספר: בקורס זה מבחן סופי בכתב בקמפוס.