The Hebrew University of Jerusalem

Syllabus

RESEARCH METHODS IN COGNITION - 6132

Last update 02-10-2019

HU Credits: 5

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: Cognitive Science

Academic year: 0

Semester: 1st Semester

Teaching Languages: Hebrew

Campus: E. Safra

Course/Module Coordinator: Tal Nahari

Coordinator Email: tal.nahari@mail.huji.ac.il

Coordinator Office Hours: Upon request

Teaching Staff:

Ms. Tal Nahari
Ms.
Mr.

Course/Module description:
* basic probability theory*
probability functions and distributions
statistics and parameter estimation
Null hypothesis significance testing (t tests, ANOVA's)
simple regression
non-parametric testing
Bayesian inference
Data analysis in R
critical thinking of research methods

Course/Module aims:
* Acquiring tools for statistical analysis and basic notions in research methods.*
Acquiring skills for critical assessment of empirical papers.

Learning outcomes - On successful completion of this module, students should be able to:
* - plan a research design.*
- Correctly use of basic statistical tests.
- Identify and avoid common mistakes, both in the statistical and methodological level.
- Critically assess scientific papers.
- Communication of research
- data visualization

Attendance requirements(%):

Teaching arrangement and method of instruction: Frontal lectures, exercises and practical software demonstrations.

Course/Module Content:
* prbability theory*
Z and t tests
ANOVAs (one- and two- way, repeated measures ANOVA)

Contrasts
regression
Effect size
Experimental designs
Correlation and causality
Reliability and validity
The "replication crisis" in the social sciences (and what can we learn from it)
Bayesian inference
Common fallacies in research.

<u>*Required Reading:*</u>
 Few papers on research methods, TBA.

 <u>*Additional Reading Material:*</u>
  Introduction to statistics for Social Sciences students A / Open University, Units 1-8

Statistical inference / Open University, Units 11-13, 15-16.

Research methods in Social Sciences, the tenants of research and its foundations / Open University, Units 1-3, 5-7

Research methods in Social Sciences, regression and analysis of variance / Open University, Units 11-12

Statistics - Hayes

 <u>*Course/Module evaluation:*</u>
 End of year written/oral examination 0 %
 Presentation 15 %
 Participation in Tutorials 0 %
 Project work 0 %
 Assignments 25 %
 Reports 0 %
 Research project 60 %
 Quizzes 0 %
 Other 0 %

<u>*Additional information:*</u>