האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

RANDOM SIGNALS & VARIABLES - 67652

Last update 04-11-2018

HU Credits: 5

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: Computer Sciences

Academic year: 0

Semester: 1st Semester

Teaching Languages: Hebrew

Campus: E. Safra

Course/Module Coordinator: Prof. Yuval Kochman

Coordinator Email: yuvalko@cs.huji.ac.il

Coordinator Office Hours: By appointment

Teaching Staff:

Prof Yuval Kochman
Mr. Royi Jacobovic

Course/Module description:
The course will cover basic topics in multivariate statistics and stochastic processes. Topics include: random Gaussian vectors, covariance matrix diagonalization, optimal estimation, linear estimation, Markov chains, definition of stochastic processes, autocorrelation, stationarity, ergodicity, Poisson processes, Gaussian processes, power spectrum, optimal linear filtering.

Course/Module aims:
Provide tools for understanding stochastic processes that appear in engineering applications, focusing on their mathematical foundations.

Learning outcomes - On successful completion of this module, students should be able to:
Analyze different stochastic processes that are common in science and engineering (Poisson, Gaussian, Markov). Understand optimal prediction for these processes, and analysis in the frequency domain.

Attendance requirements(%):
0

Teaching arrangement and method of instruction: Lectures

Course/Module Content:
NA

Required Reading:
NA

Additional Reading Material:
A. Leon-Garcia: Probability, Statistics and Random Processes for Electrical Engineering, Prentice Hall, Third Edition.
A. Papoulis and S. U. Pillai: Probability, Random Variables and Stochastic Processes, McGraw Hill, Fourth Edition.
S. M. Ross: Introduction to probability models, Academic press

Grading Scheme:

Additional information:

NA