



Syllabus

Topics in Analysis - 80612

Last update 15-09-2015

HU Credits: 2

Responsible Department: Mathematics

Academic year: 0

Semester: 1st Semester

Teaching Languages: Hebrew

Campus: E. Safra

Course/Module Coordinator: Prof. Jonathan Breuer

Coordinator Email: jbreuer@math.huji.ac.il

Coordinator Office Hours: Wednesday, 12:00--13:00

Teaching Staff:
Prof Yoram Last

Course/Module description:

Szego's Theorems deal with the asymptotics of Toeplitz determinants and are of

central importance in various areas of analysis. The course will survey several proofs of the two theorems and in particular various applications in random matrix theory, statistical mechanics, orthogonal polynomials and spectral theory.

Course/Module aims:

To study Szego's Theorems, their proofs and some of their applications.

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

to quote Szego's Theorems, to prove them and to describe applications.

Attendance requirements(%):

0

Teaching arrangement and method of instruction: Lecture

Course/Module Content:

- 1) Szego's Theorems and orthogonal polynomials.
- 2) The Law of Large Numbers and Central Limit Theorem in Random Matrix Theory.
- 3) Szego's Theorem and spectral stability.
- 4) Szego's Theorem and the Ising model.

Required Reading:

None

Additional Reading Material:

None

Course/Module evaluation:

End of year written/oral examination 0 %

Presentation 0 %

Participation in Tutorials 0 %

Project work 100 %

Assignments 0 %

Reports 0 %

Research project 0 %

Quizzes 0 %

Other 0 %

Additional information: