האוניברסיטה העברית בירושלים
THE HEBREW UNIVERSITY OF JERUSALEM

The Hebrew University of Jerusalem

Syllabus

TOPICS IN COMPLEX ANALYSIS - 80544

Last update 18-04-2020

HU Credits: 3

Degree/Cycle: 2nd degree (Master)

Responsible Department: Mathematics

Academic year: 0

Semester: 2nd Semester

Teaching Languages: Hebrew

Campus: E. Safra

Course/Module Coordinator: Prof. Genadi Levin

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

Coordinator Office Hours: By appointment.

Teaching Staff:

Prof Genady Levin

Course/Module description:

*Basic principles of complex analysis. Harmonic functions.
Univalent functions. Modular function and applications.
Weierstrass and Mittag-Leffler theorems. Special functions (Gamma and Riemann's Zeta functions, partition function). Extremal length method, modulus of topological annulus.
Introduction to the theory of quasiconformal mappings of the plane.*

Course/Module aims:

Same as in learning outcomes.

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

Familiarity with the main principles of complex analysis.

Familiarity with the geometric theory of functions of complex variable

Familiarity with the analytic theory and special functions

Understanding the relations to other areas of mathematics

To learn basic notions of the theory of quasiconformal mappings

Attendance requirements(%):

0

Teaching arrangement and method of instruction: Lecture

Course/Module Content:

*Basic principles of complex analysis. Harmonic functions.
Univalent functions. Modular function and applications.
Weierstrass and Mittag-Leffler theorems. Special functions (Gamma and Riemann's Zeta functions, partition function). Extremal length method, modulus of topological annulus.
Introduction to the theory of quasiconformal mappings of the plane.*

Required Reading:
none

Additional Reading Material:
L. Ahlfors, Complex Analysis.
G.M. Goluzin, Geometric Theory of Functions of Complex Variable.
P. Henrici, Applied and Computational Complex Analysis, I-III.
L. Ahlfors, Lectures on Quasiconformal Mappings.

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:
none