

The Hebrew University of Jerusalem

Syllabus

Seminar in analysis: Irrational numbers - 80808

Last update 12-08-2020

HU Credits: 2

<u>Degree/Cycle:</u> 2nd degree (Master)

Responsible Department: Mathematics

Academic year: 0

Semester: 1st Semester

<u>Teaching Languages:</u> Hebrew

Campus: E. Safra

<u>Course/Module Coordinator:</u> Dan Mangoubi

Coordinator Email: dan.mangoubi@mail.huji.ac.il

Coordinator Office Hours:

Teaching Staff:

Prof Dan Mangoubi

Course/Module description:

We follow the book Irrational numbers by I. Niven:

- 1) e is transcendental (Hermite, 1873)
- 2) pi is transcendental (Lindemann, 1882)
- 3) Liouville numbers
- 4) Continued franctions
- 5) Hilbert's seventh problem and Gelfond-Schneider's Theorem (1934) If a, b are algebraic then a^b is transcendental (unless a&eq;0 or 1).

Course/Module aims:

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

Acquaintance with ideas of Diophantine approximation and Transcendental Number Theory.

Attendance requirements(%):

100

Teaching arrangement and method of instruction: Lectures by students

Course/Module Content:

See course description.

Required Reading:

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<u>Additional Reading Material:</u>

Irrational Numbers, Niven.

Transcendental Numbers, Siegel.

The Theory of Numbers, Hardy and Wright.

Course/Module evaluation:
End of year written/oral examination 0 %
Presentation 80 %
Participation in Tutorials 20 %
Project work 0 %
Assignments 0 %
Reports 0 %
Research project 0 %
Quizzes 0 %
Other 0 %

Additional information: