The Hebrew University of Jerusalem

Syllabus

ERGODIC THEORY - 80615

Last update 21-09-2023

<u>HU Credits:</u> 3

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

<u>Responsible Department:</u> Mathematics

<u>Academic year:</u> 0

<u>Semester:</u> 2nd Semester

<u>Teaching Languages:</u> English and Hebrew

<u>Campus:</u> E. Safra

<u>Course/Module Coordinator:</u> Prof.Tamar Ziegler

<u>Coordinator Email:</u> tamar.ziegler@mail.huji.ac.il

<u>Coordinator Office Hours:</u> By appointment

<u>Teaching Staff:</u>

Prof. Elon Lindenstrauss

Course/Module description:
  An introductory course in ergodic theory

Course/Module aims:
  To learn the basics of ergodic theory

Learning outcomes - On successful completion of this module, students should be able to:
  The students will be able to take advanced courses in ergodic theory

Attendance requirements(%):
  0

Teaching arrangement and method of instruction:

Course/Module Content:
  motivation, Poincare recurrence, mean and pointwise ergodic theorems, mixing and weak mixing, invariant measures, ergodic decomposition, multiple ergodic theorems, entropy, Pinsker factor and K-systems

Required Reading:
 None

 Additional Reading Material:
  Ergodic theory with a view toward number theory, Einsiedler- Ward

Ergodic theory, Petersen

 Grading Scheme:
  Essay / Project / Final Assignment / Home Exam / Referat 80 %
  Submission assignments during the semester: Exercises / Essays / Audits / Reports / Forum / Simulation / others 20 %

Additional information: