



# *The Hebrew University of Jerusalem*

## *Syllabus*

### **ERGODIC THEORY - 80615**

*Last update 14-04-2020*

*HU Credits:* 3

*Degree/Cycle:* 2nd degree (Master)

*Responsible Department:* Mathematics

*Academic year:* 2022

*Semester:* 2nd Semester

*Teaching Languages:* English and Hebrew

*Campus:* E. Safra

*Course/Module Coordinator:* Prof. Elon Lindenstrauss

*Coordinator Email:* [elon@math.huji.ac.il](mailto:elon@math.huji.ac.il)

*Coordinator Office Hours:*

*Teaching Staff:*

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Prof Benjamin Weiss

Course/Module description:

*An introductory course in ergodic theory*

Course/Module aims:

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(%):

*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, entropy, Shannon-McMillan-Breiman theorem, Pinsker factor and K-systems*

Required Reading:

*None*

Additional Reading Material:

*Ergodic theory with a view toward number theory, Einsiedler- Ward*

*Ergodic theory, Petersen*

*Course notes*

Course/Module evaluation:

*End of year written/oral examination 0 %*

*Presentation 0 %*

*Participation in Tutorials 0 %*

*Project work 66 %*

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*Assignments 34 %*  
*Reports 0 %*  
*Research project 0 %*  
*Quizzes 0 %*  
*Other 0 %*

*Additional information:*