



# *The Hebrew University of Jerusalem*

## *Syllabus*

### *TOPOLOGICAL DYNAMICS - 80625*

*Last update 21-09-2024*

*HU Credits: 2*

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

*Responsible Department: Mathematics*

*Academic year: 0*

*Semester: 1st Semester*

*Teaching Languages: Hebrew*

*Campus: E. Safra*

*Course/Module Coordinator: Shahar Mozes*

*Coordinator Email: [michael.hochman@mail.huji.ac.il](mailto:michael.hochman@mail.huji.ac.il)*

*Coordinator Office Hours: by appointment*

*Teaching Staff:*

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Prof. Shahar Mozes

Course/Module description:

The course covers basic definitions and theorems in topological dynamics.

Among the topics will be:

1. Special classes like - Kronecker systems, distal flows and symbolic shifts.
2. topological entropy.
3. some applications to number theory and combinatorics.

Course/Module aims:

To encounter basic definitions and examples from topological dynamics, special classes of dynamical systems and the relations between them, and applications outside of dynamics.

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

The ability to understand more advanced material in topological dynamics.

Attendance requirements(%):

60

Teaching arrangement and method of instruction: lectures

Course/Module Content:

Basic definitions and theorems.

Recurrence and its applications: van der Waerden's theorem

Discrete spectrum and classification of isometries

Enveloping semigroup and distal systems

Topological entropy

Further topics

Required Reading:

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*There is no required reading.*

*Additional Reading Material:*

*Course notes will be published on the website.*

*Grading Scheme:*

*Essay / Project / Final Assignment / Home Exam / Referat 100 %*

*Additional information:*