

## The Department of Mathematics

2018–19–A term

**Course Name** Topological Dynamics

**Course Number** 201.2.5281

**Course web page**

<https://www.math.bgu.ac.il/en/teaching/fall2019/courses/topological-dynamics>

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**Office Hours** <https://www.math.bgu.ac.il/en/teaching/hours>

### Abstract

### Requirements and grading<sup>1</sup>

### Course topics

Examples: time flow for solutions of differential equations, symbolic dynamics, cellular automata, geodesic and horocyclic flows, interval exchange transformations, Chabauty space, profinite actions. Basic concepts: Factors and extensions, topological transitivity, minimality, equicontinuity, distality, proximality, weak mixing, almost 1-1 extensions. Topological entropy. The Ellis semigroup, Ellis theorem on the existence of idempotents, Ellis-Auslander theorem, Hindman's theorem. Universal constructions. Stone Cech compactification. The universal ambit and the universal minimal flow. Universal proximal and strongly proximal flows. Furstenberg boundary.

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<sup>1</sup>Information may change during the first two weeks of the term. Please consult the webpage for updates