

The Department of Mathematics

2017–18–B term

Course Name Topics in mathematics

Course Number 201.1.0261

Course web page

<https://math.bgu.ac.il/en/teaching/spring2018/courses/topics-in-mathematics>

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

Abstract

Requirements and grading¹

Course topics

The aim of the course is to train students in creative problem solving in various areas of mathematics, in a manner simulating, to some extent, mathematical research (rather than ordinary courses, where homework assignments are, usually closely related and quite obviously - related to the topics reviewed in class). The course will focus on problems whose solutions call for tools and ideas from several fields of mathematics, and will reveal on a miniature scale - the beauty of mathematics as an integral field of knowledge, where between seemingly unrelated subjects deep and surprising connections may arise. The problems will focus on topics in classical and modern mathematics that, due mostly to their interdisciplinary nature, are not as a rule covered in the core classes offered by the department (such topics as the axiom of choice and its applications, the Banach-Tarski paradox, transcendental number theory etc.). Classes will be divided between lectures, given by the instructor, filling in background material required to address the problems in question, and between students' presentation of their solutions to the work sheets distributed previously. In addition to all of the above, the course will help students improve their skills in searching the mathematical literature and in the art of writing and presenting proofs.

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