

The Department of Mathematics

2022–23–B term

Course Name Commutative Algebra

Course Number 201.2.2011

Course web page

<https://www.math.bgu.ac.il/en/teaching/spring2023/courses/commutative-algebra-and-homological-algebra>

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

Abstract

Requirements and grading¹

Course topics

Course Topics

1. Modules: free modules, exact sequences, tensor products, Hom modules, flatness.
2. Prime ideals and localization: local rings, Nakayama's Lemma, the spectrum of a ring, dimension and connectedness.
3. Noetherian rings: the Hilbert basis theorem, the Artin-Rees lemma, completion, grading.
4. Dimension theory: the Hilbert nullstellensatz, Noether normalization, transcendence degree.

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