

# The Department of Mathematics

2021–22–A term

**Course Name** Introduction to Commutative Algebra

**Course Number** 201.1.7071

**Course web page**

<https://www.math.bgu.ac.il/en/teaching/fall2022/courses/intro-comm-algebra>

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

## Abstract

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

## Course topics

1. Rings and ideals (revisited and expanded).
2. Modules, exact sequences, tensor products.
3. Noetherian rings and modules over them.
4. Hilbert's basis theorem.
5. Finitely generated modules over PID.
6. Hilbert's Nullstellensatz.
7. Affine varieties.
8. Prime ideals and localization. Primary decomposition.
9. Discrete valuation rings.

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