

# The Department of Mathematics

2024–25–A term

**Course Name** Introduction to Commutative Algebra

**Course Number** 201.1.7071

**Course web page**

<https://www.math.bgu.ac.il/en/teaching/fall2025/courses/intro-comm-algebra>

**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