The Department of Mathematics
2018–19–B term

Course Name Introduction to Commutative Algebra

Course Number 201.1.7071

Course web page
  https://www.math.bgu.ac.il//en/teaching/spring2019/courses/
  introduction-to-commutative-algebra

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

Abstract

Requirements and grading[1]

Rings and ideals (revisited and expanded). Modules, exact sequences, tensor products. Noetherian rings and modules over them. Hilbert basis theorem. Finitely generated modules over PID. Hilbert Nullstellensatz. Affine varieties. Prime ideals and localization. Primary decomposition. Discrete valuation rings.

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.

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

8. Prime ideals and localization. Primary decomposition.

9. Discrete valuation rings.