

The Department of Mathematics

2016–17–A term

Course Name Derived Categories III

Course Number 201.2.0363

Course web page

https://www.math.bgu.ac.il/~amyekut/teaching/2016-17/der-cats-III/course_page.html

Lecturer Prof. Amnon Yekutieli, <amyekut@bgu.ac.il>, Office 202

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

Abstract

Requirements and grading¹

Topics:

1. Review of material from past semesters (the courses “Derived Categories I and II”).
2. Derived categories in commutative algebra: dualizing complexes, Grothendieck’s local duality, MGM Equivalence, rigid dualizing complexes.
3. Derived categories in algebraic geometry: direct and inverse image functors, global Grothendieck duality, applications to birational geometry (survey), l -adic cohomology and Poincare-Verdier duality (survey), perverse sheaves (survey).
4. Derived categories in non-commutative ring theory: dualizing complexes, tilting complexes, derived Morita theory.
5. Derived algebraic geometry: nonabelian derived categories (survey), infinity categories (survey), derived algebraic stacks (survey), applications (survey).

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



Course topics

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