

## The Department of Mathematics

2015–16–B term

**Course Name** Derived categories II

**Course Number** 201.2.0362

**Course web page**

[https://www.math.bgu.ac.il/~amyekut/teaching/2015-16/der-cats-II/course\\_page.html](https://www.math.bgu.ac.il/~amyekut/teaching/2015-16/der-cats-II/course_page.html)

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

### Abstract

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

- .1 Commutative algebra via derived categories (regular and CM rings, Grothendieck's Local Duality, MGM Equivalence, rigid dualizing complexes).
- .2 Geometric derived categories (of sheaves on spaces). Direct and inverse image functors, Grothendieck Duality, Poincaré-Verdier Duality, perverse sheaves).
- .3 Derived categories associated to noncommutative rings (dualizing complexes, tilting complexes and derived Morita theory).
- .4 Derived categories in modern algebraic geometry and modern string theory (a survey).

### Course topics

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



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