

## **MAT 737 - Representations of Groups and Algebras Fall 2015**

Instructor: Professor Dan Zacharia  
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Lecture: MW 12:45–2:05, Carnegie 120.  
Office hours: MW 10:00–11:30.  
Also by appointment, and any time my door is open.  
Text: Michael Barot: *Introduction to the Representation Theory of Algebras*, Springer, 2015.

**Prerequisites:** MAT 731

**Course Description:** The course covers representation theory of finite dimensional algebras with an emphasis on representations of quivers, and Auslander-Reiten theory.

The plan is to cover the following topics:

- ✓ **representations of quivers.** (Chapters 1-3)
- ✓ **background stuff on modules and algebras as needed** (Chapters 4-5).
- ✓ **Auslander-Reiten Theory** (Chapter 6).
- ✓ **knitting** (Chapter 7). *If time permits.*
- ✓ **combinatorial invariants** (Chapter 8).
- ✓ **Gabriel's Theorem.** (Chapter 9)
- ✓ **other topics: varieties of representations, group representations.** *If time permits.*

**Expected work:** There will be some assigned homework problems to help you keep up with the development of the material. Your grade will be based on class participation and on 1-2 in-class presentations.

**Students with disabilities:** If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS), <http://disabilityservices.syr.edu>, located in Room 303 of 804 University Avenue, or call 315-443-4498 for an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible coordinating disability-related accommodations and will issue students with documented disabilities Accommodation Authorization Letters, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible. You are also welcome to contact me privately to discuss your academic needs although I cannot arrange for disability-related accommodations.

**Academic integrity policy:** The Syracuse University Academic Integrity Policy holds students accountable for the integrity of the work they submit. Students should be familiar with the Policy and know that it is their responsibility to learn about instructor and general academic expectations with regard to proper citation of sources in written work. The policy also governs the integrity of work submitted in exams and assignments as well as the veracity of signatures on attendance sheets and other verifications of participation in class

activities. Serious sanctions can result from academic dishonesty of any sort. For more information and the complete policy, see <http://academicintegrity.syr.edu>

**Religious observances policy:** SU religious observances policy recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holidays according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to are religious observance provided they notify their instructors before the end of the second week of classes. For fall and spring semesters, an online notification process is available through MySlice (Student Services -> Enrollment -> My Religious Observances) from the first day of class until the end of the second week of class.