MAT 830 — FALL 2010
COHEN–MACAULAY MODULES

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time & place:	233 Physics, TR 11:00–12:20
office hours:	MW 10–12, TR 3:30–4:30 (subject to change).
	Also by appointment, and any time my door is open
course web page:	http://www.leuschke.org/Teaching/Math830Fall2010

Course Description: The course will be an introduction to the representation theory of Noetherian local rings, that is, the study of maximal Cohen-Macaulay (MCM) modules over those rings. In particular, we will be most interested in rings with finite CM type (FCMT), i.e. only finitely many indecomposable MCM modules up to isomorphism.

For a text, we will roughly follow the book that Roger Wiegand and I are writing. The current drafts of each chapter are always available from the course web page. At the moment (August 2010) we have nearly a complete draft (around 450 pages).

The goals for the course are:

- classifications of rings of FCMT in dimensions one and two
- classification of hypersurfaces of FCMT
- questions of ascent and descent of FCMT
- Auslander-Reiten theory for MCM modules and the Brauer-Thrall theorems
- (sketchy) countable and bounded CM type

This is probably optimistic; we'll see how far we get.

Grading: Since the text for the course is a work in progress, students will be asked to help improve and polish it. In particular, exercises will be assigned (to make sure they're all true!), and it's hoped that students will come up with their own exercises to add to the book.

A student can guarantee an "A" by turning in solutions to 30 problems (either from the book, or proposed for inclusion in the book) over the course of the semester. You may work together in groups of up to three; each group should hand in a single solutions. LaTeX is strongly preferred, either electronic or hard copy. (See me if you would like help getting started with LaTeX.)

Academic Integrity: 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 academicintegrity.syr.edu.

Students with disabilities: Students who are in need of disability-related academic accommodations must register with the Office of Disability Services (ODS), 804 University Avenue, Room 309, 315-443-4498. Students with authorized disability-related accommodations should provide a current Accommodation Authorization Letter from ODS to the instructor and review those accommodations with the instructor. Accommodations, such as exam administration, are not provided retroactively; therefore, planning for accommodations as early as possible is necessary. For further information, see the ODS website, Office of Disability Services disabilityservices.syr.edu.