

**Instructor**

Peter Webb, 350 Vincent Hall, 625 3491, [webb@math.umn.edu](mailto:webb@math.umn.edu), <http://www.math.umn.edu/~webb>

Office Hours: MWF 11:15 - 12:05 or by appointment.

**Book**

We will follow much of the material in the book

H. Matsumura, Commutative Ring Theory, CUP 1986, ISBN 978-0-521-36764-6

**Course Content and Goals**

We will start by working our way through Matsumura's book. The idea is to get a good grounding in the things a commutative algebraist should know, including localization, completion, integrality, properties of prime ideals, local rings, Nakayama's lemma, discrete valuation rings, dimension, depth, regular rings and so on. I am not sure at this point how comprehensive a treatment we will find by reading through the book and it may be that we need to supplement it with other sources.

**Course Assessment**

I will assign a set of homework problems roughly every 2 weeks, giving a total of six homework assignments altogether. Your grade will be assessed on this in the following way: if you make a genuine attempt at 50% or more of the questions you will get an A for the course. You do not have to obtain correct solutions to these questions, only make genuine attempts (in my opinion). I believe that it is extremely difficult to obtain a sound and permanently lasting command of the material presented without doing some work which actively involves the student. It should be possible for everyone who wishes to obtain an A on this course.

**Expectations of written work**

Most of the time in the conventional homework problems, to satisfy my criterion of making a genuine attempt you will need to write down explanations for the calculations and arguments you make. Where explanations need to be given, these should be written out in sentences i.e. with verbs, capital letters at the beginning, periods at the end, etc. and not in an abbreviated form. I encourage you to form study groups. However everything to be handed in must be written up in your own words. If two students hand in identical assignments, they will both receive no credit.

**Prerequisites**

The content of the Math 8201/2 algebra sequence is sufficient as a prerequisite. If we need to know about Ext groups, the material in the Appendix of Matsumura may be sufficient.

**Incompletes**

These will only be given in exceptional circumstances. A student must have satisfactorily completed all but a small portion of the work in the course, have a compelling reason for the incomplete, and must make prior arrangements with me for how the incomplete will be removed, well before the end of the quarter.

Date of this version of the schedule: 1/22/2013