COURSE CONTENT & LEARNING OUTCOMES

The topics to be covered are: modules, including free, projective, & injective; exact sequences & tensor products of modules; Chain conditions; Noetherian rings & modules; graded rings, graded modules & connections with algebraic geometry; skew polynomial rings; primary decomposition. Some of these topics are covered in the textbook in chapters 10 & 15.

Expected Learning Outcomes: upon completion of this course, for any of the topics listed above, you should be able to: 1. write the definition of many of the terms; 2. solve problems; 3. construct correct & detailed mathematical arguments to justify your claimed statements, i.e., write proofs of some basic results.

This course is a second course in Abstract Algebra, & the topics covered will enable students to pursue courses such as algebraic geometry (both commutative & non-commutative), non-commutative algebra, commutative algebra, Lie algebra, Number Theory, Coding Theory, homology, etc.

Algebras are useful in classical mechanics & quantum mechanics & other areas. In particular, they play a crucial role in the mathematics behind robotics, & in the theory describing the movement of electrons in the nucleus of an atom.

HELP OUTSIDE CLASS TIME

Feel free to ask me questions during class & after class. You can also e-mail me your questions, or e-mail me to schedule an appointment. My office hours are times I am planning to be in my office or in a predecided classroom where you can drop by without an appointment to ask me questions.

My web page (given above) will list the homework as the semester progresses as well as other miscellaneous information pertinent to this course. You are advised to check it every couple of days.

You might find other books, besides the textbook, helpful to your learning, such as Hungerford’s graduate algebra book and Goodearl & Warfield’s book on Noetherian rings.

I also recommend that, if possible, y’all discuss the class material with each other & collaborate on homework. Being able to converse mathematically is a skill & is practiced by discussion with classmates & the instructor.

OVER
DISABILITY ACCOMMODATIONS

The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 93112 — The Rehabilitation Act of 1973 as amended. With the passage of the Americans with Disabilities Act (ADA), pursuant to Section 504 of the Rehabilitation Act, there is renewed focus on providing this portion of the population with the same opportunities enjoyed by all US citizens. In particular, students in this situation should notify the Disabilities Office at the start of the semester with official authorized documentation. Furthermore, if a student has an officially recognized disability, and would like special arrangements, then s/he should notify me ASAP.

SCHOLARLY INTEGRITY

It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline includes suspension or expulsion from the University and a grade of FAIL in the class given to involved student(s). Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22 of the Regents’ Rules and Regulations states the following. “Scholastic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or material that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts”.

The University reserves the right to impose disciplinary action for any kind of infraction of University policies. Engagement in conduct which disrupts, obstructs or interferes with activities authorized by the University will result in disciplinary action against the perpetrator(s). Such action includes leaving and returning to the room frequently. It also includes the use of a cellular phone, ringing cellular phones, etc.

TUITION AND GRADE REPLACEMENT/EXCLUSION

If you are dropped from this class for nonpayment of tuition, you may secure an Enrollment Loan through the Bursar’s Office. You may not continue to attend class until your Enrollment Loan has been applied to outstanding tuition fees. For other UTA information, such as grade replacement/exclusion, see www.uta.edu/catalog/general/academicreg.