

Math 505 - Abstract Algebra

Instructor: Sheng-Chi Liu

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Time: Tu,Th 12:00 - 1:15 pm

Office Hours: Tu, Th 1:20pm-2:20pm and by appointment

Textbook: *Introduction To Commutative Algebra* by M.F. Atiyah and I.G. MacDonald.

Number of credits: 3

Prerequisites: Math 421 or equivalent.

Course Description: We will cover the basic structures of rings and modules and their applications to algebraic number theory and algebraic geometry.

Weekly Schedule:

Week 1-2: Rings and Ideals

Week 3-4: Modules

Week 5-6: Localization

Week 7: Primary Decomposition

Week 8-9: Integral Dependence and Valuations

Week 10: Noetherian Rings

Week 11: Artinian Rings

Week 12-13: Discrete Valuation Rings and Dedekind Domains

Week 14: Completions

Week 15: Dimension theory

Grading Policy: The components contributing to your grade in the course are weighted as follows: class participation (30%), homework(40%), and presentations(30%).

Homework: There will be regular homework assignments. It is fine for students to work together on finding solutions for these problems. However, each student must write up the solutions on his or her own. Consulting web sites or other problem solution sources (other than the textbook) is not allowed.

WSU Disability Statement: Reasonable accommodations are available for students with a documented disability. If you have a disability and need accommodations to fully participate in this class, please either visit or call the Access Center (Washington Building 217; 509-335-3417) to schedule an appointment with an Access Advisor. All accommodations **MUST** be approved through the Access Center. For more information contact a Disability Specialist at 509-335-3417, Access.Center@wsu.edu or visit the website <http://accesscenter.wsu.edu>.

Academic integrity: Academic integrity will be strongly enforced in this course. Any student caught cheating on any assignment will be given an F grade for the course and will be reported to the Office Student Standards and Accountability. Cheating is defined in the Standards for Student Conduct WAC 504-26-010 (3). It is strongly suggested that you read and understand these definitions.

WSU Safety and Emergency: Washington State University is committed to enhancing the safety of the students, faculty, staff, and visitors. It is highly recommended that you review the Campus Safety Plan (<http://safetyplan.wsu.edu/>) and visit the Office of Emergency Management web site (<http://oem.wsu.edu/>) for a comprehensive listing of university policies, procedures, statistics, and information related to campus safety, emergency management, and the health and welfare of the campus community.