

MAT 314 / MAT 525: ABSTRACT ALGEBRA II
SPRING 2022
LECTURES AT TU TH 9:45-11:05

Topics.

This course is a continuation of MAT 313, Abstract algebra. It covers modules over rings, including structure theorem for modules over PID, theory of fields and field extensions and introduction to Galois theory. It is intended for math majors, in particular math majors in advanced track program. This course is offered as both MAT 314 and MAT 525.

Learning objectives.

A successful student will understand

- theory of modules,
- theory of fields, and
- introductory Galois theory.

Text.

Algebra (2nd edition) by Michael Artin

(Supplementary) *Abstract Algebra* (3rd edition) by David S. Dummit and Richard M. Foote

Instructor and Grader.

Instructor: Dr. Eun Hye Lee. <https://www.math.stonybrook.edu/cards/leeeun-hye.html>

Grader: Mr. Runjie Hu. <https://www.math.stonybrook.edu/cards/hurunjie.html>

Office hours may change during the semester without any prior notice: refer to Department webpage for the most updated information.

Modality of lectures.

Lectures are mainly delivered in person at Physics P112. Occasionally, lectures may temporarily be delivered online by Zoom if there are certain needs, especially due to COVID-19.

Technical and software requirements.

Since some lectures may be delivered online, you will need some technical equipments. The requirements include but are not limited to:

- computer with webcam and microphone capability and PDF viewer
- device with scanning capability
- strong internet connection
- Zoom.us client
- PDF merging software

In addition, please check course Blackboard webpage and your SBU email frequently. Any announcements posted to the Blackboard will be assumed that everyone is aware of it within 24 hours.

Assignments.

Assignments will be assigned on a weekly basis on Blackboard. Completed, stapled (not folded or paper-clipped) assignments should be submitted at the beginning of lecture on the following Thursday. No late submission will be accepted. That being said, if you are facing a difficult situation in your personal life which is affecting your work, you should contact me as soon as possible so that we can work out accommodations.

Some problems in the assignments might not be graded but you should complete all problems nonetheless. You are more than welcome to work with other people, but you are required to hand in your own solutions in your own words. Copying someone else's work will be considered as academic dishonesty. Use complete sentences and please try to write legibly. Your goal in writing should not just be to make me believe that you understand but to convince a peer of the validity of your argument.

The gold standard for typesetting mathematics is \LaTeX (<https://www.latex-project.org>), but you are not required to use it. Nonetheless, if you plan to pursue mathematics, statistics, computer science, physics, or related fields I strongly encourage you to learn to use \LaTeX .

Final exam. There will be one final exam on Tuesday, May 10, 2022, 8:00 AM - 10:45 AM.

Important note. Missing the final with a documented excuse will result in a grade of I, with a make-up final to be given at a date to be determined.

Grading policy.

The grades will be determined by 40% Assignments and 60% Final exam.

Syllabus revision.

Over the course of the semester, events may occur that require changes to the policies stated in this document. Such changes will be announced in class and on blackboard, and a revision to this syllabus will be posted.

Student Accessibility Support Center Statement.

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Student Accessibility Support Center, ECC (Educational Communications Center) Building, Room 128, (631)632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Student Accessibility Support Center. For procedures and information go to the following website: <http://www.stonybrook.edu/ehs/fire/disabilities>.

Academic Integrity Statement.

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html.

Critical Incident Management.

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.

Accommodations for Students with Hearing and Communication Impairments.

Some students with hearing and communication impairments may need their instructor to wear a clear mask for lip and facial expression purposes. If the student has registered with the Student Accessibility Support Center (SASC) and has requested an accommodation for clear masks, SASC will reach out to the student's instructors and provide a clear mask for them to wear while teaching and/or interacting with the student. If you have questions, please email sasc@stonybrook.edu or call (631) 632-6748.

Face Mask Accommodations, Modifications, or Exemptions.

The Student Accessibility Support Center (SASC) works with students who may require academic accommodations. If a student is unable to wear a mask for health reasons, the student should contact SASC at sasc@stonybrook.edu. SASC will work with the student to help identify arrangements to complete in-person courses in an alternate format. If, however, there is an in-person class that cannot be accommodated in an alternate format, a student may be approved by the Medical Director of Student Health Services to wear a modified face mask or no face covering. In this situation, SASC will communicate this information to the faculty member. Approved students will also be provided with a written exemption from the Medical Director of Student Health Services that indicates any modifications or exceptions, which they must carry with them to show faculty if requested. Please note that medical exemptions are rare and are based solely on medical necessity. If a student is exempt from the face mask policy, please consider how to seat students to ensure proper social distancing within a given instructional setting. If you have questions regarding accommodations, please email sasc@stonybrook.edu. For health related concerns in the classroom, please contact Dr. Rachel Bergeson, Medical Director, at rachel.bergeson@stonybrook.edu.