

# ABSTRACT ALGEBRA II

## MAT 314/MAT 525

Spring 2021

**Important Note:** Every effort will be made to avoid changing the course schedule, but the possibility exists that unforeseen events will make syllabus changes necessary. It is your responsibility to check Blackboard for corrections or updates to the syllabus. Any changes will be clearly noted in course announcements or through Stony Brook email.

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<b>Title:</b>	Abstract Algebra II	<b>Catalogue #:</b>	314
<b>Instructor:</b>	Olivier Martin	<b>Time:</b>	TuTh 9:45 – 11:05
<b>Email:</b>	olivier.martin@stonybrook.edu	<b>Place:</b>	Engin. 143 + Zoom
<b>Office:</b>	Math Tower 3-119	<b>Credits:</b>	3
<b>Office hours:</b>	Tu 14:00-15:00, Th 15:00-16:00	<b>MLC hours:</b>	F 12:00-13:00
<b>Grader:</b>	Aleksandar Milivojevic		

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**Prerequisites:** MAT 313 or permission of instructor.

**Required textbook:** *Abstract Algebra*, David S. Dummit, Richard M. Foote, 3<sup>rd</sup> edition, John Wiley & Sons, 2004.

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

**Evaluation:** There will be roughly weekly problem sets and a 2 hour final exam. Your final grade will be based on your grades on homework (40%) and the final (60%). Your two lowest grades on the homework will be dropped but not individual extension will be given and late homework will not 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.

**Homework:** Homework will be assigned on a more or less weekly basis on Blackboard. A due date will appear on each homework and completed homeworks should be uploaded to Blackboard. **Be careful, the due time is 9pm, not midnight, and no late homework will be accepted.** Some homework problems might not be graded but you should complete all homework problems nonetheless. You can collaborate with others but you must hand in your own write-ups. 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 L<sup>A</sup>T<sub>E</sub>X(<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 L<sup>A</sup>T<sub>E</sub>X. Other options for completing assignments are using a word processor along with an equation editor (this is usually painful), a tablet with a note taking app, or completing assignments by hand and scanning/taking a picture of your assignment. Whatever option you choose, **you should upload a PDF file and make sure your handwriting/typesetting is legible, the scan/photo quality is good, and the file size is relatively small. Questions regarding grading should be addressed to the grader at [milivojevic@math.stonybrook.edu](mailto:milivojevic@math.stonybrook.edu).**

**Office hours and MLC:** The office hours and MLC hours will be held by zoom in my “Personal Zoom Meeting” <https://stonybrook.zoom.us/j/2974763950?pwd=TjRsS1ltZmk2M2M4UGpkbDh2cy9TZz09>, Meeting ID:

297 476 3950. In addition, I will be in my office for in person office hours at the same time. I will answer questions on a first come first served basis but will circle through participants.

**Course delivery mode:** This is a hybrid class with lectures given in real time on Zoom as well as in person. You can find the Zoom meeting for classes and office hours on Blackboard. The first week of class will be online due to NY state's quarantine order. Students must be mindful of all course expectations, deliverables and due dates.

**How we will communicate:** Course-related questions should be posted in the General Questions Forum in the course discussion board on Blackboard. For personal/private issues, email me directly. If you use Blackboard's email tool from the course site, it will automatically include your full name, course name and section when you send me an email. Please allow 48-50 hours for an email reply. Your Stony Brook University email must be used for all University-related communications. You must have an active Stony Brook University email account and access to the Internet. All instructor correspondence will be sent to your SBU email account. Plan on checking your SBU email account regularly for course-related messages. To log in to Stony Brook Google Mail, go to <http://www.stonybrook.edu/mycloud> and sign in with your NetID and password. Regular announcements will be sent from Blackboard. These will be posted in the course site and may or may not be sent by email.

Regular communication for both instructors and students is essential in hybrid classes. Logging in once a day, checking the discussion board and participating with your peers ensures that you are able to remain an active member of the class.

**Technical Requirements:** This course uses Blackboard for the facilitation of communications between faculty and students, submission of assignments, and posting of grades and feedback. The Blackboard course site can be accessed at <https://blackboard.stonybrook.edu> If you are unsure of your NetID, visit <https://it.stonybrook.edu/help/kb/finding-your-netid-and-password> for more information. You are responsible for having a reliable computer and Internet connection throughout the term. Caution! You will be at a disadvantage if you attempt to complete all coursework on a smart phone or tablet. It may not be possible to submit the files required for your homework assignments. Students should be able to use email, a word processor, spreadsheet program, and presentation software to complete this course successfully. The following list details a minimum recommended computer set-up and the software packages you will need to have access to, and be able to use:

- PC with Windows 10 or higher (we recommend a 3-year Warranty),
- Macintosh with OS 10.11 or higher (we recommend a 3-year Warranty),
- Intel Core i5 or higher,
- 250 GB Hard Drive,
- 8 GB RAM ,
- Latest version of Chrome or Firefox; Mac users may use Chrome or Firefox. (A complete list of supported browsers and operating systems can be found on the My Institution page when you log in to Blackboard.),
- High speed internet connection,
- Word processing software (Microsoft Word, Google Docs, etc.) ,
- Headphones/earbuds and a microphone,
- Webcam (recommended),

- Printer (optional),
- Ability to download and install free software applications and plug-ins (note: you must have administrator access to install applications and plug-ins).

## COURSE AND UNIVERSITY POLICIES

**Student Accessibility Support Center Statement:** If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, 128 ECC Building, (631) 632-6748, or via e-mail at: [sasc@stonybrook.edu](mailto:sasc@stonybrook.edu). They will determine with you what accommodations 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 the Student Accessibility Support Center. For procedures and information go to the following website: <https://ehs.stonybrook.edu/programs/fire-safety/emergency-evacuation/evacuation-guide-people-physical-disabilities> and search Fire Safety and Evacuation and 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. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. 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](http://www.stonybrook.edu/commcms/academic_integrity/index.html).

Important Note: Any form of academic dishonesty, including cheating and plagiarism, will be reported to the Academic Judiciary.

**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. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.

**Understand When You May Drop This Course:** It is the student's responsibility to understand when they need to consider withdrawing from a course. Refer to the Stony Brook Academic Schedule for dates and deadlines for registration: [http://www.stonybrook.edu/commcms/registrar/calendars/academic\\_calendars](http://www.stonybrook.edu/commcms/registrar/calendars/academic_calendars).

**Incomplete Policy:** Under emergency/special circumstances, students may petition for an incomplete grade. Circumstances must be documented and significant enough to merit an incomplete. See [https://www.stonybrook.edu/sb/bulletin/current/policiesandregulations/records\\_registration/course\\_load\\_withdrawal.php](https://www.stonybrook.edu/sb/bulletin/current/policiesandregulations/records_registration/course_load_withdrawal.php) for details.

**Course Materials and Copyright Statement:** Course material accessed from Blackboard, SB Connect, SB Capture or a Stony Brook Course website is for the exclusive use of students who are currently enrolled in the course. Content from these systems cannot be reused or distributed without written permission of the

instructor and/or the copyright holder. Duplication of materials protected by copyright, without permission of the copyright holder is a violation of the Federal copyright law, as well as a violation of Stony Brook's Academic Integrity.