



# MATH 3321-001: Abstract Algebra I

## Spring 2018



**Instructor:** Prof. M. Vancliff   PKH 462   [vancliff@uta.edu](mailto:vancliff@uta.edu)   817-272-3932

**Web pages:**   <http://www.uta.edu/math/vancliff/T/S18>   <http://www.uta.edu/math/vancliff>  
<https://www.uta.edu/profiles/michaela-vancliff>

**Course Classroom:** PKH 113      **Course Time:** Tues & Thurs 5:30-6:50 pm.

**Office Hours:** see <http://www.uta.edu/math/vancliff/T/S18/index.html#3321>

**Textbook:** A First Course in Abstract Algebra, 7th Ed., by J. B. Fraleigh, Addison-Wesley.

**Prerequisite:** A, B or C in MATH 3300 and MATH 3330, or permission of instructor.

**Tests:** Test 1: Thurs Feb 15 (20 minutes) = 12%;      Test 2: Thurs Mar 22 (30 minutes) = 16%;  
Test 3: Thurs Apr 12 (70 minutes) = 30%;      Final Test: **5:30-8:00 pm on Tues May 8** = 38%  
All tests are comprehensive.      Bring photo ID to all tests.

**Weighting:** see above + attendance = 4%. Each test will be “curved” separately and its grade (not score) will contribute to your course grade. If you have a nonzero score on each of Tests 1-3 and if the grade on your Final Test is higher than your lowest grade from Tests 1-3, then your lowest grade will be replaced by the grade from the Final Test. Good attendance & participation will help your course grade if your course grade is borderline. **Any student who does not earn a nonzero score on the Final Test for this class will not pass this class.**

**Attendance:** the instructor of this class chooses to record attendance and it will factor into the students' grades (see “weighting” above). You are responsible for any, and all, announcements made in class and on the course website. You are responsible for any, and all, material missed during lecture. If you miss a lecture, you can figure out the material covered by checking the homework assignment for that day.

Note that the U.S. Department of Education requires that UTA have a mechanism in place to mark when Federal Student-Aid recipients “begin/end attendance in a course.” UTA instructors will report when students begin/end attendance in a course as part of the final grading process. In particular when assigning a student a grade of F, faculty report the last date the student attended their class; this date is reported to the Department of Education for Federal financial-aid recipients.

**Important Dates:** Wed Jan 31 = Census date;      Tests (see above): Feb 15, Mar 22, Apr 12, May 8;  
Mar 12-17 = Spring Break; 4 pm Fri Mar 30 = last day/time to drop course with W (see page 3);  
Thurs May 3 = our last class.      Note these dates in your calendar!

**Course Content & Schedule:** groups, normal subgroups, factor groups, Sylow Theorems. We will cover most of most of chapters 1-3 and some of chapter 7. On average, we will cover roughly one section per lecture. Of course, snow days etc will interfere with our progress.

**Student 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 and detailed mathematical arguments to justify your claimed statements.

Groups are useful in classical & quantum mechanics, chemistry, coding theory & other areas; in particular, they play a crucial role in robotics, & in describing the movement of electrons in an atom.

**Honors Students:** honors students wishing to earn honors credit for this course should send the instructor an e-mail as soon as possible.

**Homework:** the homework will be posted [online](#). It will not be collected, but is assigned to help you learn the material and prepare for the tests. It is your brain exercise. The tests will be designed to determine whether you have mastered the ideas in the homework and in the lectures. Indeed, at least half of each test will be based on homework problems. Some reading might also be assigned, owing to the amount of material that we need to cover.

**Calculators:** no calculator is allowed on any test, so you are advised not to use one on the homework.

**Expectations for Out-of-Class Study:** beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least **9 hours/week** outside class in course-related activities, including reading materials, completing assignments, preparing for tests, etc. The best way to guarantee a good grade in this course is to take good lecture notes and to read them over after class before starting the homework, and to do ALL the assignments on a regular basis and to discuss the material with each other. After completing any one assignment, put together a list of the ideas you learned in doing that assignment; keep your list to help you when studying for the tests. It is very important that you know how to work out the homework problems correctly. If you use a solutions manual, be sure to use it in a way that helps you understand & remember the concepts and arguments. See the [course website](#) for a link to a list of techniques on how to study. Check the course website every couple of days.

**Help Outside Class Time:** feel free to ask the instructor **relevant** questions during class, right after class & in the instructor's office hours. You can also e-mail the instructor questions, or you can ask the instructor to look over your solution to a homework problem. No appointment is necessary for office hours. A chat room on Blackboard is also available. Ian Lim has been assigned to our class as a GTA; once I know his office hours, I will post them at the [course website](#).

**Student Support Services:** in addition to the resources for this class, UTA provides various resources & programs to help students develop academic skills, deal with personal situations, & better understand concepts & information related to their courses. E.g., [tutoring](#), [major-based learning centers](#), developmental education, [advising and mentoring](#), [personal counseling](#), and [federally funded programs](#). For individualized referrals, students should either visit the reception desk at University College, or call the Maverick Resource Hotline (817-272-6107), or contact [resources@uta.edu](mailto:resources@uta.edu), or view the information at [uta.edu/universitycollege/resources/index.php](http://uta.edu/universitycollege/resources/index.php) or at [uta.edu/utsi](http://uta.edu/utsi). **The IDEAS Center** (2<sup>nd</sup> Floor of Central Library) offers **free** tutoring to students (with focus on transfer students, sophomores, veterans & others undergoing a transition to UTA). To schedule an appointment with a peer tutor/mentor, e-mail [IDEAS@uta.edu](mailto:IDEAS@uta.edu) or call (817) 272-6593. Also, a list of tutors is available from the Mathematics Department Office, but note that this list is not endorsed by the Mathematics Department.

**Conflict with Test Dates:** students who miss tests due to UNauthorized reasons will NOT be accommodated. Your personal commitments (e.g., job) must accommodate the test dates/times. If you have a conflict with a test, or if you miss a test, you should contact the instructor as soon as possible (in person, by e-mail, or by phone (leave a message on instructor's office answering machine (NOT with the math office) if the instructor is not there)). If you miss any test for an authorized reason which can be verified with official documentation (e.g., hospitalization), then accommodations will be offered (no make-up tests). Any student who does not earn a nonzero score on the Final Test for this class will not pass this class.

**Americans with Disabilities Act:** UTA is on record as being committed to both the spirit & letter of all federal equal-opportunity legislation, including *The Americans with Disabilities Act*, *The Americans with Disabilities Amendments Act*, and *Section 504 of the Rehabilitation Act*. All instructors at UTA are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a **letter certified** by the [Office for Students with Disabilities \(OSD\)](#), & only those students who have officially documented a need for an accommodation will have their request honored. See the [OSD](#) for more information on accommodations and conditions that qualify for accommodations.

Furthermore, if a student has applied for accommodation with OSD, and would like special arrangements for any test, then s/he **should notify the instructor** informally (e.g., by e-mail) **as soon as possible** so that appropriate arrangements can be made in time for the first test. The instructor is happy to help in such cases, but early advance notification helps the instructor a lot in this endeavor.

**Writing Center:** the Writing Center, in 411 Central Library, offers FREE tutoring in 15-, 30-, 45-, & 60-minute face-to-face & online sessions to all UTA students on any phase of their UTA coursework. Register and make appointments online at [uta.mywconline.com](http://uta.mywconline.com). For hours & other information visit [uta.edu/owl/](http://uta.edu/owl/).

**Drop Policy:** students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if s/he does not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through UTA might be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>). See page 1 above for the drop date for this semester.

**Academic Integrity:** students enrolled in UT Arlington (UTA) courses are expected to adhere to the UTA Honor Code:

*I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*

*I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

UTA faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of a test or requiring students incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with UTA policy, which might result in the student's suspension or expulsion from UTA & a grade of FAIL in the class given to involved student(s). In particular, the Regents' Rules and Regulations states: 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 a test for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts". Photo-ID is REQUIRED at all tests. UTA has informed all its instructors that steps should be taken to discourage cheating on tests. Consequently, the instructor will uphold the following during the tests:

- cellular phones & other electronic devices need to be OFF (not silent mode);
- all items not needed for the test, including cellular phones & other electronic devices, should be placed on the floor by the side wall;
- if you wish to leave the room during a test, you should ask permission first and turn in your test to the test proctor & only in exceptional circumstances will you be permitted to continue the test should you return (so it is better to be 3 minutes late to the test, rather than ask to go to the restroom during the test);
- if you finish a test early but prefer to stay in the room, then you should NOT get out any work, book nor item, no matter what the subject matter is.

Remember, in any test, keep your eyes on your own work only.

**In-Class Behavior:** during all classes & tests, cellular phones should be SWITCHED OFF and any electronic device not used for learning the class material should be out of sight. UTA reserves the right to impose disciplinary action for any kind of infraction of UTA policies. Engagement in conduct that disrupts, obstructs or interferes with activities authorized by UTA will result in disciplinary action against the perpetrator(s). Such conduct includes (but is not limited to) leaving and returning to the room frequently during class (even for restroom breaks), refusing to put one's belongings by the wall when asked to do so, the use of a cellular phone, ringing cellular phones, etc.

**Emergency Exit Procedures:** should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, i.e., turn right or left & head to the nearest exit door down the hall. When exiting the building during an emergency, one should never take an elevator but should use the stairs. During a tornado-warning siren, students are advised to congregate in PKH 110 (turn left out of our classroom), or in a classroom near PKH 110 without a window. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

**Electronic Communication:** UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php> .

**Non-Discrimination Policy:** UTA does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit [uta.edu/eos](http://uta.edu/eos) .

**Title IX:** UTA is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments Act of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. For information regarding Title IX, visit [www.uta.edu/titleIX](http://www.uta.edu/titleIX) or contact Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or [jmhood@uta.edu](mailto:jmhood@uta.edu).

**Student Feedback Survey:** at the end of each term, students enrolled in classes categorized as “lecture,” “seminar,” or “laboratory” shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student’s feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

**Final Review Week:** a period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the course grade, except make-up tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. **During this week, classes are held as scheduled.** In addition, instructors are not required to limit content to topics that have been previously covered; **instructors may introduce new concepts as appropriate.**

**Campus Carry:** the Campus Carry Law allows licensed individuals to carry a concealed handgun in buildings at UTA, except in locations UTA has established as prohibited. For more information, visit <http://www.uta.edu/news/info/campus-carry/>. Under this law, openly carrying handguns is not allowed at UTA.

#### Some Library Resources:

Library Home Page.....	<a href="http://library.uta.edu">http://library.uta.edu</a>
Academic Plaza Consultation Services.....	<a href="http://library.uta.edu/academic-plaza">http://library.uta.edu/academic-plaza</a>
Subject Guides.....	<a href="http://libguides.uta.edu">http://libguides.uta.edu</a>
Subject Librarians.....	<a href="http://library.uta.edu/subject-librarians">http://library.uta.edu/subject-librarians</a>
Database List.....	<a href="http://libguides.uta.edu/az.php">http://libguides.uta.edu/az.php</a>
Course Reserves.....	<a href="http://pulse.uta.edu/vwebv/enterCourseReserve.do">http://pulse.uta.edu/vwebv/enterCourseReserve.do</a>
Library Tutorials .....	<a href="http://library.uta.edu/how-to">http://library.uta.edu/how-to</a>
Connecting to the library from Off-Campus.....	<a href="http://libguides.uta.edu/offcampus">http://libguides.uta.edu/offcampus</a>
Ask a librarian.....	<a href="http://ask.uta.edu">http://ask.uta.edu</a>
FabLab.....	<a href="http://fablab.uta.edu">http://fablab.uta.edu</a>
Study Room Reservations.....	<a href="http://openroom.uta.edu">http://openroom.uta.edu</a>
Scholarly Communications .....	<a href="http://library.uta.edu/scholcomm">http://library.uta.edu/scholcomm</a>

<p><b>Emergency Phone Numbers:</b> in case of an on-campus emergency, call the UT Arlington <b>Police</b> Department at <b>817-272-3003</b> (non-campus phone), <b>2-3003</b> (campus phone), or <b>911</b>. (For non-emergency, call the UTA police at 817-272-3381.)</p>
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