Math 3307  Elementary Number Theory  Fall 2019

Location:  PKH 102  
Days and Time:  TuTh 3:30-4:50 pm  
Instructor:  Dimitar Grantcharov  
Instructor’s Office:  PKH 421  
Web page:  http://www.math.utdallas.edu/faculty/grandim  
E-mail:  grandim@uta.edu  
Office Hours:  TuTh 12:50-1:50 pm, or by appointment  
Telephone:  272-1148  

Prerequisites:  2.0 or better in nine hours of college mathematics.  


Course Content and Learning Outcomes:  This course addresses the core objectives of critical thinking skills, communication skills, and empirical and quantitative skills:  
1. Critical Thinking Skills – to include creative thinking, innovation, inquiry, analysis, evaluation and synthesis of information.  
2. Communication Skills – to include effective development, interpretation, and expression of ideas through written, oral and visual communication  
3. Empirical and Quantitative Skills – to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.  

Learning Outcomes:  Upon successful completion of this course, the students will:  
1. Gain awareness of the properties of integers, prime numbers, congruences and other fundamental concepts of number theory.  
2. Be able to state and prove simple theorems in number theory.  
3. Be able to process and organize information and express the conclusion in mathematical writing.  
4. Be able to think critically and creatively so as to prove or disprove mathematical statements.  

Grading Scale:  
90-100  A  
80-89  B  
70-79  C  
60-69  D  
0-59  F  

Grade Components:  
Midterm Exam 1:  22%  (Tuesday, October 1)  
Midterm Exam 2:  22%  (Thursday, October 31)  
Midterm Exam 3:  22%  (Tuesday, November 26)  
Final Exam:  34%  (Tuesday, December 10, 2-4:30 pm)  

Midterms and Final:  The Final Exam is comprehensive. You will be asked to present a UTA picture ID at all exams. Please bring your UTA picture ID to all exams.  

Extra credit:  Pop-up quizzes and homework assignments may be given for extra credit.  

Make-up Exam Policy:  No make-up exams will be allowed unless there is a verifiable excuse such as a medical emergency. In such a case you should contact me (via phone, email, in person, note, etc.) before the exam. Make-up exams will be more difficult. If you have a conflict with any of the Midterms or the Final Exam, you must contact me in writing no later than the Census Date, September 6, 2019.
Homework and quizzes: Homework assignments will be given after every lecture. The problems assigned will also be posted on the course webpage. Keep a collection of all assigned homework. A selected portion of the homework assignment will be collected and graded on a regular basis. No late homework will be accepted. A few popup quizzes may be given for extra credit.

Lecture Attendance: At The University of Texas at Arlington, taking attendance is not required but attendance is a critical indicator in student success. Each faculty member is free to develop his or her own methods of evaluating students’ academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, I will not take attendance. However, while UT Arlington does not require instructors to take attendance in their courses, the U.S. Department of Education requires that the University have a mechanism in place to mark when Federal Student Aid recipients “begin attendance in a course.” UT Arlington instructors will report when students begin attendance in a course as part of the final grading process. Specifically, when assigning a student a grade of F, faculty report the last date a student attended their class based on evidence such as a test, participation in a class project or presentation, or an engagement online via Blackboard. This date is reported to the Department of Education for federal financial aid recipients.

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 they do not plan to attend after registering. Students will not be automatically dropped for non-attendance. Repayment of certain types of financial aid administered through the University may 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/aaoo/fao/).

Calculators: No calculators will be allowed on the midterm and final exams.

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the Americans with Disabilities Act (ADA). All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Title IX Policy: The University of Texas at Arlington (“University”) 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 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 or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or jmhood@uta.edu.

Academic Integrity: Students enrolled in this course are expected to adhere to the UT Arlington 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.

UT Arlington 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 an examination or requiring students to 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 University policy, which may result in the student’s suspension or expulsion from the University.

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.

Campus Carry: Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit http://www.uta.edu/news/info/campus-carry/.

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 final grade, except makeup 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; they may introduce new concepts as appropriate.

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. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information
related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

Active-Shooter Information: see https://police.uta.edu/crime-prevention/active-shooter-resources.php and consider watching the video at https://www.youtube.com/watch?v=5VcSwejU2D0

Important Dates:

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Friday, September 6</td>
<td>Census Date, Deadline for makeup exam requests</td>
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<tr>
<td>Tuesday, October 1</td>
<td>MIDTERM 1</td>
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<tr>
<td>Thursday, October 31</td>
<td>MIDTERM 2</td>
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<tr>
<td>Friday, November 1</td>
<td>Official last day to drop, W awarded</td>
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<tr>
<td>November 27- November 30</td>
<td>Thanksgiving Holiday</td>
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<tr>
<td>Tuesday, November 26</td>
<td>MIDTERM 3</td>
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<tr>
<td>SWednesday, December 4</td>
<td>Last day of classes</td>
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<tr>
<td>Tuesday, December 10, 2-4:30 pm</td>
<td>FINAL EXAM</td>
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Homework Problems (check the course website for updates):

- §1.3: 2, 4, 6, 7, 10, 18, 20, 21
- §1.4: 2, 4, 11, 13, 18, 19, 20, 23, 28
- §1.5: 2, 4, 6, 8, 10, 12, 14, 16, 17, 18, 19, 20, 21, 24, 28, 30, 32, 33
- §3.1: 2, 4, 6, 8, 15, 20, 26, 27, 28
- §3.2: 2, 4, 6, 8, 10, 11, 12, 13, 17, 18, 22, 24, 30
- §3.4: 2, 3, 4, 6, 7, 8
- §3.5: 2, 4, 6, 8, 29, 31, 32, 34, 36, 37, 38, 39, 58
- §3.7: 2, 4, 6, 8, 10, 13, 14, 18
- §4.1: 2, 4, 6, 8, 10, 14, 16, 20, 22, 25, 27, 28, 32
- §4.2: 2, 3, 8, 13, 14
- §4.3: 2, 4, 6, 12, 33, 35
- §4.4: 1, 2, 3, 4, 6, 8, 10
- §5.1: 2, 4, 19, 22, 23, 24
- §5.2: 2, 4, 6, 8
- §6.1: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 28, 30
- §6.3: 2, 4, 6, 7, 8, 10, 15, 17
- §7.1: 2, 4, 7, 8, 12, 14, 18
- §11.1: 2, 4, 6, 7, 13, 19, 20, 21
- §11.2: 1, 2, 3, 4, 5