SYLLABUS, MATH 4201 SECTION 01, SPRING 2019

NUMBER THEORY, 3 CREDIT HOURS

(Hyperlinks for accessibility are provided throughout this document with full URLs noted in the footnote.)

INSTRUCTOR INFORMATION AND OFFICE HOURS
Dr. Mike Hilgemann
Office: Sequoya 119
Email: mhilgemann@daltonstate.edu
Office Phone: 706-272-2167

Office hours (or by appointment):
- Monday: 10:50 AM – 12:05 PM
- Tuesday: 9:25 AM – 10:40 AM
- Wednesday: 10:50 AM – 12:05 PM
- Thursday: 9:25 AM – 10:40 AM

MEETING TIMES AND LOCATION
Monday and Wednesday, 12:15 PM – 1:30 PM in Sequoya 103

REQUIRED TEXT AND MATERIALS
Textbook: Elementary Number Theory by David Burton (7th Edition)

Other Required Materials: Scientific calculator

PRE-REQUISITES AND CO-REQUISITES
MATH 3101

COURSE DESCRIPTION
A study of elementary problems in number theory with topics from divisibility, congruences, residues, number theoretic functions, Diophantine equations, and cryptography.
STUDENT LEARNING OUTCOMES

Upon completion of this course, students will be able to

- Demonstrate an understanding of the arithmetic properties of the integers and divisibility;
- Demonstrate an understanding of the theory of prime numbers;
- Work with and compute congruences, including solution methods and related theorems;
- Work with and compute number theoretic functions, including Euler’s phi function;
- Solve simple Diophantine equations;
- Apply number theory to cryptography.

METHODS OF ASSESSING STUDENT LEARNING OUTCOMES

The above learning outcomes will be assessed using a cumulative final exam at the end of the semester.

COURSE POLICIES

- Students are expected to attend class and actively participate, both of which are crucial for success in this course. Arrive on time for class each day and do not distract other students during class.
- Students should silence and put away all cell phones, music players, or other electronic devices before class begins. Each student should bring their calculator, notes, and text to class every day.
- In the event that a student misses a class, it is their responsibility to find out what was discussed that day, to read the relevant material in the textbook, and to attempt practice problems on that material from the end of the relevant section.
- Each student should check their Dalton State email and GeorgiaView regularly (at least once a day) for announcements, schedule changes, or other information. Not checking email or GeorgiaView will not be an excuse for missing such information.
- Students must spend a significant amount of time outside of class working problems, writing proofs, and building an understanding of the material - this is when the majority of learning will take place. Grades in this course are based on performance, not effort, so students should work toward understanding and not just putting in time.
- Students should seek help outside of class if they are struggling with the content of this course or with writing proofs by going to their instructor’s office hours or making an appointment with him.
- Students are responsible for knowing the policies of this course and the information on this syllabus. Changes to course policies or this syllabus will be announced in class and posted on GeorgiaView.

GRADING POLICY

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A student’s grade in this course will be based on the percentage of points earned out of the maximum possible points, using the usual 90/80/70/60 scale.

- Two mid-term exams: 100 points each
- Cumulative final exam: 100 points
- Quizzes: 10 points each, with the lowest three scores dropped
- Written homework: 5 points per problem

HOMEWORK

Homework problems will be assigned on a regular basis and posted on GeorgiaView. These assignments are worth 5 points per problem and are very important to understanding the material in this course and to improving your proof writing skills. Students may work with other students or seek help from the instructor on these problems, but each student should individually write up his or her own solutions to turn in – copied or identical solutions will receive reduced or zero points. Homework should be organized and either neatly written or typed using LaTeX – illegible solutions will be returned to the student to be rewritten. Homework will be graded on both correctness and completeness of the argument or justification – just an answer is not a sufficient solution. Students are expected to turn in homework on time. Each problem that is turned in late will be reduced by 1 point per day beyond the due date. Exceptions can be made for certain excusable situations beyond the student’s control – make sure the instructor is informed in a timely manner.

QUIZZES

Each normal class day there will be a short quiz given at the beginning of class worth 10 points per quiz. These quizzes can cover any previous material discussed in class. Problems on the quizzes will test knowledge of definitions and theorems, understanding of key concepts and properties, and the ability to do number theoretic computations or write short proofs. The three lowest quiz scores will be dropped when calculating final grades. Students may use a scientific calculator on each quiz, but they may not use their notes, the text, or any other electronic device without permission from the instructor.

EXAMS

There are a total of three in-class exams during the semester, which includes a cumulative final exam at end of the semester. Each exam is worth 100 points and will include problems testing understanding of definitions, theorems, and concepts. All exams will also include computational problems and proofs in addition to problems testing understanding of concepts, definitions, and theorems. Students may use a scientific calculator on each exam, but they may not use their notes, the text, or any other electronic device without permission from the instructor. In some cases, formulas may be provided on the exam for all students. Any such formulas will be announced prior to the exam. Exams are tentatively scheduled for February 11, March 25, and May 1.
EXTRA HELP
If students need extra help in this course, they have several options. First and foremost, students should feel welcome to stop by your instructor’s office hours if they have questions on the content, on specific problems, or assistance in writing sound proofs (or make an appointment for a time that works for both). Students can also email short questions to their instructor — a reply within 24 hours can be expected, but not generally in the evenings. Students are also encouraged to work with other students on the homework and while preparing for quizzes and exams.

CHEATING
Cheating of any kind on any assignment, quiz, or exam is a violation of the student code of conduct and will result in a score of 0 for that assessment and a cheating incident report being filed with the college. In extreme circumstances, such as cheating on an exam, cheating may also result in an automatic failing grade for the course.

LATE WORK/MAKE-UP POLICY
Make-up exams will be given only at the discretion of the instructor and only for emergencies, school or athletic activities, or other unavoidable situations. If possible, you must notify your instructor in advance if you need to miss an exam so that we can schedule a make-up time. If an emergency causes you to unexpectedly miss an exam, you must talk to or email your instructor within 24 hours of the missed exam and you must provide documentation to verify your absence. All make-up exams will be scheduled with and taken in the Testing Center (Liberal Arts Building 103, 706-272-2606) but you must contact your instructor before an appointment may be made. Make-ups for quizzes or other in-class work will be given in cases of emergencies, school or athletic activities, or other unavoidable situations; students needing such accommodation must e-mail or contact their instructor as soon as a conflict is known. Any make-up quizzes must be completed before the next class meeting.

EMERGENCY INSTRUCTIONAL PLAN
In the event the college is closed due to inclement weather or another unforeseen event, students will consult the schedule provided with this syllabus to determine which section would be covered during the missed class day. Students will read the corresponding section in the textbook, and should complete all assigned problems before returning to class. Students should check GeorgiaView for announcements and any changes to the schedule that result from the missed class. Students should also check their email for any additional information or assignments sent from their instructor. The instructor will be available via email for questions when the college is closed unless power outages prevent access to the internet.
CARE TEAM
The Campus Assessment, Response, and Evaluation Team, also known as CARE, at Dalton State College engages in proactive and collaborative approaches to identify, assess, and mitigate potential risks associated with members of the campus who exhibit concerning or unusual behaviors. Report a concern through the CARE Reporting Form. Should you have questions, contact the Dean of Students’ Office at 706.272.4428.

DISABILITY ACCESS
(From Disability Access website)
Students with disabilities or special needs are encouraged to contact Disability Access. In order to make an appointment or to obtain information on the process for qualifying for accommodations, the student should visit the Disability Access Library Guide or contact the Disability Access office.

Contact information
Andrea Roberson, Associate Director of Disability Access and Student Support Services
Pope Student Center, upper level
706-272-2524
aroberson@daltonstate.edu

ETHICAL CONDUCT
Academic Dishonesty. Cheating and plagiarism are a part of the Dalton State Student Code of Conduct, which can be found in its most updated form at Dalton State Student Code of Conduct. ANY assistance provided or given in any way toward work in a class constitutes cheating, unless such behavior is authorized by your instructor. Additionally, any use of the ideas or words of others should be noted, or this will constitute plagiarism. Using another students’ work or collaborating on an assignment not designated as collaborative is unacceptable. Furthermore, presenting work that was completed for another class, while not plagiarism technically, is not the same as presenting original work, and is therefore unacceptable unless it has been authorized by your instructor. For more details on what Dalton State considers to be Academic Dishonesty, please review the Student Code of Conduct. Instructors will assign grades based on classroom performance. Additional sanctions may be provided as a learning experience from the Student Conduct process.

Classroom Behavior. Dalton State is committed to respect via the Roadrunner Respect pledge. To learn more, please visit Roadrunner Respect. “I pledge to show my fellow Roadrunner students, faculty, staff, and administration respect by treating others the way they want to be treated and by thinking about others first before making decisions that might affect them.”

COURSE WITHDRAWAL STATEMENT
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The last day to drop this class without penalty (a W or a required signature) is **Friday, March 22**. If you complete the proper paperwork to drop the course by this date, you will be assigned a grade of W. After this date, withdrawal without penalty is permitted only in cases of **Extreme Hardship** as determined by the Vice President for Academic Affairs; otherwise a grade of WF will be issued. Students who fail to complete the official drop/withdrawal procedure will receive the grade of F. Withdrawal from class is a student responsibility. The grade of W counts as hours attempted for the purposes of financial aid.

**FULL WITHDRAWAL STATEMENT**

The proper form for withdrawing from all classes at the college after the official drop/add period but before the published withdrawal date (Academic Campus Calendar vii) is the **Schedule Adjustment Form** viii All students must meet with a staff member at the Dean of Students office in the upper-level of the Pope Student Center to initiate the withdrawal process and complete an exit interview. After meeting with the staff member, students will then finalize the withdrawal process in the Enrollment Services Office.

**GRADE APPEALS**

A student may file a formal challenge to a grade if there is unequivocal evidence that one or more of the following applies:

a) It was a direct result of arbitrary and capricious conduct on the part of the instructor;
b) The instructor discriminated against the student on the basis of a protected classification as the term is defined by Federal Law, Georgia State Law, or the Administrative Code of the City of Dalton;
c) The grade was incorrectly calculated;
d) A clerical error occurred in recording the grade; or
e) A mitigating circumstance prevented the student from completing a final assignment or attending the final exam.

To appeal a grade, the student must notify the instructor in writing no later than two days after the posting of final grades. See **Grade Changes and Appeals** ix for the complete documentation.

**ACADEMIC PROGRESSION**

To remain in academically good standing, students must maintain an institutional GPA of 2.0 or higher. Students who do not maintain a 2.0 move through a sequence of statuses ranging from Academic Warning to Academic Probation to Academic Suspension to Academic Dismissal. See **Academic Progress** x for the complete documentation.
OFFICIALLY APPROVED DSC GROUPS AND ACTIVITIES

When students are engaged in officially approved Dalton State groups or activities that require them to participate in events off campus during school days, they shall be treated similarly to any faculty or staff member acting in that same capacity. Thus, just as faculty and staff have excused absences from their regular work schedules, students shall be excused from class without penalty if they are off campus representing Dalton State College in an approved, official capacity during their regular class time. Examples include presenting a paper or otherwise participating in a conference, attending a University System student affairs event, participating in intercollegiate competition (athletic or academic), participating in an approved field trip, etc. Just as faculty and staff members are required to submit Request to Travel forms for approval, in order to be excused, the student needs to provide the following information to the instructor prior to the date when he/she will be absent from class:

- notification of the event (in the case of athletics, students should provide each instructor a schedule of away events at the beginning of the semester or as soon as possible after the schedule is available);
- estimated time of departure from and return to campus (for example, if a student has an away game in the evening and will not be leaving campus until 3:00, he/she will not be excused from classes prior to that time on that day; similarly, if the event is in the morning and the student will be returning to campus during the day, he/she is expected to attend any class scheduled after the return trip); and
- contact information for the person or organization sponsoring/authorizing the student’s participation in the event.

The student shall be allowed to make up any work missed during the time he/she is off campus representing DSC in an official capacity. He/she shall discuss what will be missed with the instructor and make arrangements to make up any assignments, tests, presentations, etc. scheduled on that date.

TITLE IX INFORMATION

Student Sexual Misconduct Policy
In accordance with Title IX of the Education Amendments of 1972 (“Title IX”), the University System of Georgia (USG) does not discriminate on the basis of sex in any of its education programs or activities or in employment. The USG is committed to ensuring a safe learning and working environment for all members of the USG community. To that end, this Policy prohibits sexual misconduct, as defined herein.

Please visit the Title IX at Dalton State web page for additional information on the policy, How to Report, Resources, and Campus Programs.
**HOUSE BILL 280**

*House Bill 280* commonly known as the “campus carry” legislation, is effective as of July 1, 2017.
**FULL URL LINKS**

i CARE Reporting Form: https://cm.maxient.com/reportingform.php?DaltonStateCollege&layout_id=1

ii Disability Access: http://libguides.daltonstate.edu/c.php?g=24716&p=149667


v Roadrunner Respect: https://www.daltonstate.edu/campus_life/respect-photo-gallery.cms


vii Academic Campus Calendar: https://www.daltonstate.edu/about/calendars.cms


ix Grade Appeals: https://libguides.daltonstate.edu/ld.php?content_id=42740257

x Academic Progression: https://libguides.daltonstate.edu/ld.php?content_id=42740270


xii Title IX at Dalton State web page: https://www.daltonstate.edu/about/title-ix.cms

xiii Title IX Policy: https://www.daltonstate.edu/about/title-iv-policy.cms

xiv Title IX How to Report: https://www.daltonstate.edu/about/title-ix-report.cms

xv Title IX Resources: https://www.daltonstate.edu/about/title-ix-campus-community-resources.cms

xvi Title IX Campus Programs: https://www.daltonstate.edu/about/title-ix-campus-community-resources.cms

xvii House Bill 280: http://www.usg.edu/hb280