

COR 203—Great Ideas of Modern Mathematics

Dr. J. Lynn Gieger
Spring 2014

Course Information

Time: TTh, 11:30am-1:00pm
Location: Academic Success Center, Philip Weltner Library
Text: Aufmann, Lockwood, Nation, & Clegg (2013). *Mathematical Excursions* (3rd Edition). Belmont, CA: Brooks/Cole.

Contact Information

Office: Hearst 311
Telephone: 404-504-3412
Email: lgieger@oglethorpe.edu

Office Hours

Monday and Wednesday, 10:00am—noon, 2:30—3:30pm
Or by individual appointment

Course Objectives

This course explores major modern mathematical developments and helps students to understand and appreciate the unique approach to knowledge employed by mathematics. The course is organized around three major mathematical ideas that have emerged since the time of Sir Isaac Newton. Through successful completion of this course, students will be able to solve basic problems in the three areas covered in the course and present their solutions concisely, coherently, and rigorously.

Course Topics

Set Theory
Probability
Logic

Coursework and Grades

Tests There will be three in-class tests, the last of which occurs in the final exam week. This last test is not cumulative.

Online quizzes Following every class meeting (other than those involving one of the three tests indicated above), students will be required to take an online quiz, administered via WebAssign. Students may use their calculator and their notes but no other resources (book, websites, each other, etc.), and students can take them as many times as needed during the allotted time period. These quizzes account for half of the points on a students quiz average.

Quiz problem submitted in writing Following each online quiz, students are required to print one of the problems and provide a complete solution, demonstrating a well-structured and valid argument and using appropriate mathematical notation and definitions (as needed). This allows the student to demonstrate not just procedural competency but also conceptual understanding of the material. Again, class notes may be used as reference, but no other resources are allowed. These write-ups account for half of the points on a students quiz average. Written solutions are due at the beginning of class on the day the online quiz is due, and no late work will be accepted. You may, however, submit your work electronically or send it via another classmate if you are unable to attend class that day.

Written work will be graded using the following scale:

5 points—Very Good	(work that is careful and thorough, with clear reasoning and communication; could potentially serve as an model for other students)
4 points—Good	(good, solid work with only minor gaps in reasoning or communication)
3 points—Satisfactory	(work that has merit but contains significant shortcomings in reasoning and communication)
2 points—Unsatisfactory	(work that shows effort but contains serious flaws in reasoning or communication)
1 points—Failing	(work submitted but contains irrevocable flaws in reasoning and execution)
0 points—Did not submit	

Reading Responses The goal of the reading response is to expose you to the area before class **and** help me find out what areas are troublesome for students. Student are expected to read and respond to each section of the text *prior* to the class in which that section will be addressed (see course calendar for section dates). Please note that students are responsible for one response *per section of the text*—when a section covers multiple days, students are responsible for submitting a response prior to the first day of the section *only*. Students will submit their responses via Moodle, and each response must have **two** of these four these parts:

1. Parts of the reading you did understand, citing *at least* two specific topics or examples.
2. Parts of the reading you did not understand, citing *at least* two specific topics or examples.
3. A *new* and *specific* exercise you have made up and answered based on the material in the reading.
4. If you did not understand the reading to sufficient degree, explain in prose exactly your understanding of the section from the start to where you first got lost.

Each reading response will be **due by 9pm the night before the class the reading is for**. This gives the instructor time to review your responses and alter the class discussion and activity as needed. Each person who responds will receive full credit if it meets the above criteria (instructor's discretion as to what "counts" for each part). *Late responses will receive no credit.*

Your final grade in the course will be calculated using these percentages:

Reading Responses	5%
Quizzes	25%
Two Highest Test Scores	30% each
Lowest test score	10%

Letter grades will be assigned according to the University scale available in the Oglethorpe Bulletin.

Attendance

Regular attendance and participation are vital to your success in this class. ***A student with 4 or more consecutive absences or 7 or more total absences will be required to withdraw or be assigned a grade of "FA" for the course.*** I do not make a distinction between excuses versus unexcused absences—if you aren't here or if you miss a significant portion of the class, you're absent. It is your decision as to whether your particular circumstance is significant enough to miss class. The consequence given above is designed to insure that you do not take that decision lightly. The only exceptions to this rule are if your absence is required due to an Oglethorpe-sponsored event or an official religious holiday, in which case your absence will not be factored into your attendance status. In this circumstance, documentation *and* prior notice are required.

Classroom behavior

A wide variety of circumstances and behaviors can significantly contribute to a productive class meeting. These include, but are not limited to, preparing specific questions about the reading (using phrases like "I know ___, but I'm unsure about ___" rather than "I don't get it"), showing up for class on time with all appropriate materials, asking thoughtful questions during class, and contributing to a respectful classroom discourse when appropriate. I encourage you to be aware of these and other positive behaviors and strive to make them part of your experience in this class.

Similarly, there are a wide variety of circumstances and behaviors that can significantly distract from a productive class meeting. These include (but are not limited to) texting, coming to class late, getting up and leaving class in the middle, sleeping in class, not participating with your group, distracting your group or other groups, or the use of derogatory or disrespectful language toward me or your classmates. Please note that I reserve the right to assign an absence to you for the day at my discretion if I feel that your behavior is having a significant negative impact on the experience of the rest of the class.

Withdrawal from the Course

University policy states that students withdrawing from a course may do so by **5:00pm** on Wednesday, **March 26*** with a "W." Students withdrawing after **5:00pm** on Wednesday, **March 26*** will receive a grade of "WF", regardless of current progress in the course. Only in the event of medical emergency or hardship may students appeal a grade of "WF" to the Provost. Students should note that any withdrawal is not official until it is filed in the Registrar's Office. The date the withdrawal is *received* in the Registrar's Office will be the official date for the change.

Course Schedule

		Topic	Assignments/Announcements
Week 1	Tue, Jan 14	Introduction Pre-Test	
	Thu, Jan 16	SET THEORY 2.1	
Week 2	Tue, Jan 21	SET THEORY 2.2	Quiz 1 Last day for drop/add, Tuesday Jan 21
	Thu, Jan 23	SET THEORY 2.3	Quiz 2
Week 3	Tue, Jan 28	SET THEORY 2.4	Quiz 3
	Thu, Jan 30	SET THEORY 2.5	Quiz 4
Week 4	Tue, Feb 4	SET THEORY review	Quiz 5
	Thu, Feb 6		Test 1
Week 5	Tue, Feb 11	PROBABILITY 12.1	
	Thu, Feb 13	PROBABILITY 12.2	Quiz 6
Week 6	Tue, Feb 18	PROBABILITY 12.2	Quiz 7
	Thu, Feb 20	PROBABILITY 12.3	Quiz 8
Week 7	Tue, Feb 25	PROBABILITY 12.3	Quiz 9
	Thu, Feb 27	PROBABILITY 12.4	Quiz 10
Week 8	Tue, Mar 4	PROBABILITY 12.4	Quiz 11
	Thu, Mar 6	PROBABILITY 12.5	Quiz 12 Midterm grades submitted, Fri Mar 7
Week 9	Tue, Mar 11	PROBABILITY 12.5	Quiz 13
	Thu, Mar 13	PROBABILITY 12.5	Quiz 14
SPRING BREAK			
Week 10	Tue, Mar 25	PROBABILITY review	Quiz 15 "W" day, Wed, March 26, 5:00pm
	Thu, Mar 27		Test 2
Week 11	Tue, Apr 1	LOGIC 3.1	
	Thu, Apr 3	LOGIC 3.2	Quiz 16
Week 12	Tue, Apr 8	LOGIC 3.2	Quiz 17
	Thu, Apr 10	LOGIC 3.3	Quiz 18
Week 13	Tue, Apr 15	LOGIC 3.4	Quiz 19
	Thu, Apr 17	LOGIC 3.5	Quiz 20
Week 14	Tue, Apr 22	LOGIC 3.5	Quiz 21
	Thu, Apr 24	LOGIC 3.6	Quiz 22
Week 15	Tue, Apr 29	LOGIC 3.6	Quiz 23
	Thu, May 1	LOGIC review	Quiz 24
Finals Week			Test 3 Thursday, May 8, 11:15am

Incompletes

If a student is unable to complete the work for a course on time for reasons of health, family tragedy, or other circumstances the instructor deems appropriate, the grade of "I" may be assigned. If the student completes the work within thirty days of the last day of exams (of the semester in question), the instructor will evaluate the work and turn in a revised grade. Any "I" not changed by the professor within forty-five days of the last day of exams is automatically changed to a grade of "F."

Disabilities/Learning Disabilities

If you are a student with a disability or disability related issue and feel that you may need a reasonable accommodation to fulfill the essential functions of the course that are listed in this syllabus, you are encouraged to contact Disability Services in the Academic Success Center at 404.364.8869 or disabilityservices@oglethorpe.edu. The ASC will conduct an intake and, if appropriate, the office will provide an academic accommodation notification letter for you to bring to me. **Note that accommodations start when I receive such a letter and are not retroactive.**

Honor Code

Persons who come to Oglethorpe University for work and study join a community that is committed to high standards of academic honesty. The honor code contains the responsibilities we accept by becoming members of the community and the procedures we will follow should our commitment to honesty be questioned.

The students, faculty and staff of Oglethorpe University expect each other to act with integrity in the academic endeavor they share. Members of the faculty expect that students complete work honestly and act toward them in ways consistent with that expectation. Students are expected to behave honorably in their academic work and are expected to insist on honest behavior from their peers.

The code proscribes cheating in general terms and also in any of its several specialized sub-forms (including but not limited to plagiarism, lying, stealing and interacting fraudulently or disingenuously with the honor council). The Code defines cheating as "the umbrella under which all academic malfeasance falls. Cheating is any willful activity involving the use of deceit or fraud in order to attempt to secure an unfair academic advantage for oneself or others or to attempt to cause an unfair academic disadvantage to others. Cheating deprives persons of the opportunity for a fair and reasonable assessment of their own work and/or a fair comparative assessment between and among the work produced by members of a group. More broadly, cheating undermines our community's confidence in the honorable state to which we aspire."

A lengthy but non-exhaustive list of specific examples of cheating are given in Section 3 of the *Oglethorpe Honor Code*. The following is a subset (again, non-exhaustive) that pertains to this course:

- The unauthorized possession or use of notes, texts, electronic devices (including, for example, computers and mobile phones), online materials or other such unauthorized materials/devices in fulfillment of course requirements.
- Copying another person's work or participation in such an effort.
- An attempt or participation in an attempt to fulfill the requirements of a course with work other than one's original work for that course.
- Violating the specific directions concerning the operation of the honor code in relation to a particular assignment.
- Making unauthorized copies of graded work for future distribution.
- Lying about the reason for an absence to avoid a punitive attendance penalty or to receive an extension on an exam or on a paper's due date.

Students pledge that they have completed assignments honestly by attaching the following statement to each piece of work submitted in partial fulfillment of the requirements for a course taken for academic credit:

"I pledge that I have acted honorably." (Followed by the student's signature)

The honor code is in force for every student who is enrolled (either full- or part-time) in any of the academic programs of Oglethorpe University at any given time. All cases of suspected academic dishonesty will be handled in accordance with the provisions established in this code. The honor council has sole jurisdiction in matters of suspected academic dishonesty. Alternative ways of dealing with cases of suspected academic fraud are prohibited. In cases of alleged academic dishonesty on the part of students, the honor council is the final arbiter.

Please sign and return this page no later than the end of class on January 23.

I have read and understand the syllabus for COR 203 and agree to all of the course requirements.

Name (printed) _____

Date _____

Signature _____

University email _____

Preferred phone number _____