Instructor: Dr. John C. Merkel III
Office: Lupton Hall 302
Phone: 404.364.8519 (office)
email: jmerkel@oglethorpe.edu
http://www.oglethorpe.edu/faculty/ j_merkel

Great Ideas of Modern Mathematics
Core 203 - Section 3, 4
Oglethorpe University
Spring 2015
Syllabus

Class Information:

Time:	MWF 8:00 - 9:00 (3), 9:15-10:15 (4)
Location:	Robinson 104
Textbook:	*Mathematical Excursions* by Aufmann et al. (3$^{\text{rd}}$ Ed.)

Office Hours:

MWF	10:30 - 12:10
TuTh	11:30 - 12:00

and by appointment.

Course Objectives: Upon completing the course students will be able to:

- Apply *inductive* and *deductive* reasoning to solve problems.
- Identify a *true statement*. Verify a *false statement* is false by providing a *counterexample*.
- Construct a *truth table* for a compound statement.
- Determine whether an argument is valid.
- Use standard counting techniques to determine probabilities.
- Calculate conditional probabilities.
- Calculate probabilities using Bayes' Theorem.
- Implement the plurality, Borda count, and pairwise comparisons vote counting methods.
- Determine if a voting system is anonymous, neutal, monotone.
- Determine if a voting system satisfies the Condorcet Criterion or Independence of Irrelevant Alternatives.
- Determine the Banzhaf Power Index for a player in a weighted voting system.
- Solve apportionment problems using Hamilton's Method or Jefferson's Method.

Attendance: Students are expected to attend all class sessions. It is imperative that students take the exams and quizzes on the announced dates, as there will be no make-up exams or quizzes. Attendance will affect your course grade. Each student will receive 3 personal days, which may be used for sick days, doctor or legal appointments, family emergencies, etc. Each absence beyond the 3 personal days will result in 1% being deducted from the students final course percent. Also, each tardy will count as one-third of a personal day. Student's arriving to class more than 1 second late may be marked tardy. Leaving class early will carry the same penalty as a tardy.

Absences may be excused if and only if students are taking part in official university sanctioned events (sporting events, travel for a course, etc.). The absence will only be excused if the student submits appropriate documentation. If the student had prior knowledge of the event, then any assignments due on the day of the student's absence should be handed in prior to that day. Additionally, it is the student's responsibility to check Moodle for any course work that may have been assigned on the day they missed and to turn that course work in by the due date, even if it is the class period following the day they were absent.

Studying: In general, students should expect to study 2 hours for every hour spent in class. Great Ideas of Modern Mathematics meets 3 hours per week. Therefore students should expect to spend about 6 hours per week studying for the course. Students who are not strong in mathematics should expect to spend additional time studying.

Quizzes: Throughout the semester there may be quizzes. The quizzes may or may not be announced in advance. Your performance on these quizzes, should they occur, will count toward your final course grade.

Hour Exams: There will be two one-hour exams during the semester.

Final Exam: There will be one final exam.

Grading: Your Preliminary Course Percent (PCP) will be determined according to the following weights:

HW/Quizzes	25%
Exam I	25%
Exam II	25%
Final Exam	25%

Your final course percent (FCP) will be determined by the formula:

$$\text{FCP} \quad = \quad \text{PCP} - \text{Absences over 3}$$

Your final course grade will be determined by your FCP according to the following scale:

A	93 - 100%	B	83 - 87%	C	73 - 77%	D	60 - 67%
A-	90 - 93%	B-	80 - 83%	C-	70 - 73%	F	0 - 60%
B+	87 - 90%	C+	77 - 80%	D+	67 - 70%		

Incompletes A temporary grade of I (incomplete) will be given only under extreme circumstances. Complete information on its subsequent conversion to a permanent grade (A-F) can be found in the University Bulletin.

Returned Material: Students are responsible for keeping all returned graded course material. In the rare event of a computer system failure or discrepancy with the grade book the course material may be necessary to reconstruct the course grade.

Honor Code, Cheating and Plagiarism: 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.

Oglethorpe welcomes all who accept our principles of honest behavior. We believe that this code will enrich our years at the University and allow us to practice living in earnest the honorable, self-governed lives required of society's respected leaders.

Our honor code is an academic one. 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 impacting or connected to the academic enterprise and involving the use of deceit or fraud in order to attempt to secure an unfair advantage for oneself or others or to attempt to cause an unfair disadvantage to others. Cheating undermines our community's confidence in the honorable state to which we aspire.*"

The honor code applies to all behavior related to the academic enterprise. Thus, it extends beyond the boundaries of particular courses and classrooms per se, and yet it does not extend out of the academic realm into the purely social one.

Examples of cheating include but are not limited to:

1. 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.

2. Copying another person's work or participation in such an effort.

3. 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.

4. Forging or deliberately misrepresenting data or results.

5. Obtaining or offering either for profit or free of charge materials one might submit (or has submitted) for academic credit. This includes uploading course materials to online sites devoted, in whole or in part, to aiding and abetting cheating under the guise of providing "study aids." There is no prohibition concerning uploading exemplars of one's work to one's personal website or to departmental, divisional, University or professional society websites for purposes of publicity, praise, examination or review by potential employers, graduate school admissions committees, etc.

6. Violating the specific directions concerning the operation of the honor code in relation to a particular assignment.

7. Making unauthorized copies of graded work for future distribution.

8. Claiming credit for a group project to which one did not contribute.

9. Plagiarism, which includes representing someone else's words, ideas, data or original research as one's own and in general failing to footnote or otherwise acknowledge the source of such work. One has the responsibility of avoiding plagiarism by taking adequate notes on reference materials (including material taken off the internet or other electronic sources) used in the preparation of reports, papers and other coursework.

10. Lying, such as: 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; fraudulently obtaining Petrel Points by leaving an event soon after registering one's attendance and without offering to surrender the associated Petrel Point, or by claiming fictitious attendance for oneself or another; forging or willfully being untruthful on documents related to the academic enterprise, such as on an application for an independent study, a registration form or a purported transcript.

11. Stealing, such as: Stealing another's work so that he/she may not submit it or so that work can be illicitly shared; stealing reserve or other materials from the library; stealing devices and materials (such as computers, calculators, textbooks, notebooks and software) used in whole or in part to support the academic enterprise.

12. Fraudulent interaction on the part of students with the honor council, such as: Willfully refusing to testify after having been duly summoned; failing to appear to testify (barring a bona fide last-minute emergency) after having been duly summoned; testifying untruthfully.

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.