MGF 1106 (Fall 2019)

Course Description

MGF 1106, Mathematics for Liberal Arts I is a general education/math course which is not intended to prepare you for Precalculus or Calculus. Instead, this course is meant to improve general mathematical reasoning skills and cover topics that are broadly applicable in daily life. This course qualifies for both GenEd and Gordon Rule credits.

Instructor Information

Name: Dr. Ross Ptacek
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Prerequisites: None
Credits: 3
Course Content Overview: Voting methods, fairness in voting methods, weighted voting, fair division, data, probability, the normal distribution, symmetry, and fractal geometry

This is an **ONLINE COURSE – all content is delivered online**. Students view lectures for each module online, complete online homework and quizzes using the publishers' software MyMathLab. The three unit exams are also completed in MyMathLab but are administered using ProctorU. The course management system used for this class is Canvas.

The course is divided into three units as follows:

1. **Unit 1: The Mathematics of Social Choice.** We will study methods for carrying out elections (standard and weighted settings) and dividing assets. Emphasis is given to mathematical definitions of fairness in these areas and determining which methods are fair in which way.
2. **Unit 2: The Mathematics of Chance.** This unit covers the mathematics of randomness. This

includes, basic probability theory with an emphasis on expectation and risk management, and statistics from the point of view of normal distributions.

3. **Unit 3: The Mathematics of Shape and Form.** In this unit we lay down the mathematical framework for describing symmetry of 2d and some 3d objects. We also consider fractal geometry, a study of the Mandelbrot set (perhaps the most famous fractal of all), and the connection between randomness and fractals.

Course Materials

Textbook

Our textbook is *Excursions in Modern Mathematics, 9th Edition* by Peter Tannenbaum.

The textbook is primarily available as an e-book which **must be purchased using UF All Access**. Instructions for purchasing the textbook are in the introductory module on the home page of our Canvas course.

In order to view the e-book and gain access to the online homework exercises, you must also **sign up for for MyMathLab**. Instructions for this process are also available in the introductory module.

Other Materials

All other materials will be presented on the module pages on Canvas. The module pages include links to the video lectures and notes. Typically video lectures are narration and annotation of slides, and the notes are the unannotated slides. While the video lectures are intended to be comprehensive, students are responsible both for watching the videos and reading the textbook.

Coursework

Assignments in this class fall into the following categories: Lecture Quiz, Homework, Quiz, Exams, and Exam Review. Each of these will be described now.

Lecture Quizzes. Each lecture has a corresponding lecture quiz which contains about 2-5 questions whose answers come directly from the lecture. They should not require significant work or computation to complete, but lecture quizzes **must be completed with a 100%** score to access the corresponding homework.

By default, students get **five attempts** on the quiz. More attempts can be obtained by emailing me, but students who repeatedly exhaust their attempts without asking for help on the questions they are missing will face a penalty on the corresponding homework. Students will be warned directly prior to facing a penalty.

Lecture quizzes do not appear in the assignment list or in the modules, but attempting a homework prior to completing the lecture quiz will produce a prerequisite warning with a link to the quiz. Alternately, the lecture quiz can be accessed through the assignment list in MyMathLab (through the “MyLab and

Mastering" link in Canvas).

Homework. There are two introductory homework assignments, the Chapter O Homework (5 points) which details how to use MyMathLab and the Syllabus Quiz (5 points) which covers material in this document and in the Introduction module.

Most Homework assignments are used to reinforce topics covered in the online lectures. A **lecture quiz** (which does not count for points) **must be completed with a perfect score before the homework can be attempted**. There will be approximately 15 points of homework assigned per week split across the various sections that we cover. There are a total of **180 weekly homework points** (15 x 12 weeks). These homework assignments stay open until the beginning of the final exam window (12/9 at 8 AM)**,** but homework **must be completed with a score of 70%** in order to attempt that week's quiz. Students get unlimited attempts on homework.

Quizzes. There are weekly (12) quizzes, **due on Friday** except rarely in the case of holiday. The quiz covers the same material as the week's homework. Each quiz is worth 15 points for a total of **180 points** (15 x 12 weeks). Students get two attempts at the quiz with the better attempt counting for their grade.

Exams. Each of the three units culminates with a 120 point exam (**360 total exam points**). Each exam is approximately 16 questions and must be completed within 60 minutes. Exams are worked in MyMathLab but must be taken with the online proctoring service ProctorU. The exam signup period will typically be 3 days long. Signup must be completed 72 hours prior to the exam date in order to avoid a processing fee.

Additionally, there is a cumulative final exam which may replace the lowest of your three unit exams. Yes, this means that the final is optional if you are satisfied with your grade after the third exam.

Exam Reveiws. Each exam is preceded by a 5 point review assignment (**15 total review points**). Exam reviews have approximately 32 questions and no time limit. The exam review can be taken as many times as desired but is not reviewable until the beginning of the exam window after the review is due. This means that exam reviews are due at 8 AM on the first day of the exam window.

Calculator Policy: You're free to use whatever calculator you'd like on the homework. Some problems may require a calculator, but most do not. On the exams you **must use one of the following two online calculators.** On the unit 1 exam, you must use the calculator at https://www.desmos.com/fourfunction. On the rest of the exams, you may use the calculator at https://www.desmos.com/scientific.

The final exam period is **Monday 12/9 8:00 AM to Wednesday 12/11 10:00 PM** (all times EST). Please note that this is different from what is listed on the registrar's site because this is an online course.

Course Calendar

A tentative weekly schedule can be found here: MGF1106 Summer B 2019 Calendar.

Grades

Summarizing the above section, there are a total of 750 points available in the class arranged as follows:

Homework: 190 Points (10 points intro + 180 from weekly hw)
Quizzes: 180 Points (12 quizzes x 15 points)
Exams: 360 Points (4 exams [1 dropped] x 120 points)
Exam Reviews: 20 Points (4 reviews x 4 points)
Total: 750 Points

Final grades are assigned based on the total points accumulated as shown in the table below.

Passing Grades	
Letter Grade	**Point Range**
A	675-750
A-	645-674
B+	615-644
B	585-614
B-	555-584
C+	525-554
C	495-524

Non-Passing Grades	
Letter Grade	**Point Range**
C-	465-494
D+	435-464
D	405-434
D-	375-404
E	0-374

The grading scheme above will be strictly adhered to. Partial points are **not** rounded up. The percentage grade shown in Canvas or MyMathLab is a useful **estimate** of your status in the class, but your **final grade is completely determined by your points earned as shown in the Canvas gradebook**. To estimate your grade, take the percentage in Canvas or MyMathLab as a decimal and multiply by 750. For example a 75% would estimate that you will complete the course with 0.75*750=562.5 points which is a B-.

Makeup and Extension Policy

Any makeup request or extension **must be made at least a business day prior to the deadline of the assignment** unless an emergency prevents communication. Makeups and extensions are only approved in the case of official UF business, religious observances, or personal emergency. Makeups and extensions may be denied if the reason for absence was known well ahead of time. Assignments and lectures are made available well in advance of their due date, so students are expected to work around their extracurricular activities within reason, and the makeup request must be made as soon as possible.

Special Accommodations

Students with disabilities requesting accommodations on homework, quizzes, and exams must first register with the Dean of Students Office. The Dean will provide the student with documentation, which must be

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Evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

Academic Honesty

The University of Florida expects students to be honest in all of their university class work. Please remember to commit yourself to academic honesty with the pledge:

"*We, the members of the University of Florida Community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.*"

The Math Department expects you to follow the academic honesty guidelines. Matters of violations of academic honesty are adjudicated by the Student Honor Code.

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