



G-MA 201 – Survey of Mathematics – Section 01
McPherson College - Mathematics Department
Spring 2015

INSTRUCTOR: Mark Hunter
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OFFICE HOURS: 2-3pm Mon, 3-4pm Tues, 10–11 am Wed/Fri; or by appointment

Feel free to contact me if you have questions about the material, course concerns, upcoming absences, or just to chats. I will be on campus at various times throughout the week so you can schedule an appointment or just drop by. E-mail or text me anytime and try to call during reasonable hours. We can schedule additional office hours and appointment times as needed.

COURSE MEETING TIME: MWF 9:00am – 9:50pm, Lectures in Melhorn Hall, Room 112

UNITS/CREDIT HOURS: 3.0

PREREQUISITES:

ID110 with a grade of C or better, or two years of high school mathematics and an ACT mathematics score of at least 15 or appropriate score on the departmental placement test.

REQUIREMENTS MET:

This course is required of all mathematics majors or may be used to meet the mathematics foundation requirement for general education.

REQUIRED TEXT/SOFTWARE:

A resource fee of \$25 is being charged for this class to cover expenses of the book, online work, and other materials used during the semester. Payment must be paid to the business office using the forms supplied in class.

1. Math in Society, by David Lippman, Edition 2.4, licensed under a Creative Commons license (<http://creativecommons.org/licenses/by-sa/3.0/us/> .) The textbook will be provided to students in class once a receipt from the business office for the \$25 resource fee is turned in. A PDF version of this textbook will also be provided online.
2. Access homework and quizzes will be provided through MyOpenMath.com.
Course ID: 5018
Enrollment Key: MA201SP2015
Complete instructions on accessing this system will be provided in class. Online access will be provided to students in class once a receipt from the business office for the \$25 resource fee is turned in.

The lectures do not provide enough time to cover all material, so you are expected to read the textbooks to supplement lectures and clarify concepts.

ACADEMIC SERVICES:

The Royer Center for Academic Development (Miller Library, main level) is open to all students who need academic assistance in any class.

FINAL EXAM: May 12, 8am-10pm. You must notify me before Spring Break, March 14, if there is any acceptable reason that you need to take the final exam at a different time.

COURSE GOAL:

To introduce students to the study of the philosophy, nature, significance and use of mathematics from early times to the present. Subject areas include Social Choice, Management Science, Growth Modeling, and Shapes. Topics may include conflict resolution using fair division; mathematical analysis of voting systems; the use of graph theory to solve optimization problems in management science; applications of geometry to the size and shape of objects and to calculating inaccessible distances; geometric growth and decay; number systems; and logic.

COURSE OBJECTIVES:

- Students will explore the history of counting and elections.
- Students will understand basic election methods.
- Students will learn graph theory applications.
- Students will understand paths and circuits.
- Students will learn financial calculations for home and business.
- Students will develop the use of mathematics in education, business, and civil environments.

TEXTBOOK PARTS & CHAPTERS:

- Review & Problem Solving
 1. Solving Real World Problems
- Growth
 2. Growth Models: There is Strength in Numbers
 3. Financial Mathematics: Money Matters
- History
 4. Historical Counting Systems
 5. Cryptography
- Social Choice
 6. The Mathematics of Elections: The Paradoxes of Democracy
 7. The Mathematics of Power: Weighted Voting
 8. The Mathematics of Sharing: Fair-Division Games
 9. The Mathematics of Apportionment: Making the Rounds
- Management Science / Graph Theory
 10. The Mathematics of Getting Around: Euler Paths and Circuits
 11. The Mathematics of Touring: Traveling Salesman Problems
 12. The Mathematics of Networks: The Cost of Being Connected
 13. The Mathematics of Scheduling
- Shape and Form
 14. Fractal Geometry: The Kinky Nature of Nature
 15. Fibonacci Numbers and the Golden Ratio: Tales of Rabbits and Gnomons
- Data and Logic
 16. Describing Data
 17. Sets
 18. Logic

CLASSROOM DECORUM: Students are expected to show respect for their fellow students, for the course, and for the College. Please arrive on time, do not leave early and do not talk in class except in the context of classroom discussion

CALCULATOR POLICY:

A basic calculator is highly recommended. You may not use a smart device (smart phone or iPad) or share a calculator during quizzes or tests. I will have basic calculators available for quizzes and exams.

ELECTRONICS POLICY: Do not use cell phones, radios, music players, etc. during class time.

Laptops may only be used as part of the class. Cell phones must be placed in silent mode and texting is not permitted during class. If you use a cell phone, I will ask you to leave, and you will be marked as absent for that class period. If a cell phone is seen during a test or quiz day, you will be asked to leave and will receive **an automatic grade of zero** on that test or quiz. Talk to me before class if there is a reason you must be contacted.

ASSESSMENT: Course grades will be based on daily homework assignments, class participation, quizzes, and the final exam.

Unless explicitly stated in advance, quizzes and exams are closed-book and closed-notes. Only the specified programs may be used when a computer is required, otherwise no electronic devices may be used. Make-up assignments, quizzes, and exams will not be given except in case of a serious emergency. Evidence that you were physically unable to take an exam will be reviewed to determine if a make-up is warranted. If you will miss an assignment, quiz or exam due to an excused campus activity then you must complete the assessment in advance or it will not be accepted.

Homework –Homework will generally be assigned with about one week to complete. There is often overlap in due dates in order to allow questions about an assignment to be addressed during a class period before it is due. Late homework may be accepted up to one week late with a penalty of 10% every 24 hours. Each student may submit (2) late homework assignments without penalty if the homework is submitted before the next class period. Late homework questions will not be accepted after they are reviewed in class. Disputes about homework grading must be made within 2 weeks of receiving the grade. Homework will be in paper and electronic format.

* Your homework average will account for 40% of your final grade.

Class Preparation and Participation – You will be asked to investigate some topics between classes and provide an informal presentation occasionally. A discussion on these topics and general classroom discussions should involve all students - you are part of everyone's learning experience. There will also be in-class worksheets.

* Your preparation and participation grade will account for 10% of your final grade.

Quizzes – There will be quizzes over each chapter throughout the course of the semester. Quiz dates will be announced in advance.

* Your quiz average will account for 25% of your final grade.

Tests - There will a test over each part of the textbook

* These tests will account for 16% of your final grade.

Examination - There will be a comprehensive final examination.

* This examination will account for 9% of your final grade.

GRADING SCALE:

Your final grade will be the average of the above. The standard 10-point scale will be used:
A = 90% – 100%, B = 80% – 89%, C = 70% – 79%, D = 60% – 69%, F = 0% – 59%

DISABILITY/EMERGENCY CLAUSE: If you have any condition or situation that you feel prevents you from doing your best work in this course, it is your responsibility to bring that condition or situation to the attention of the instructor or the college administration. Effort will be made to assist you in your learning in this course. It is important that we are informed early in the term so that we can make appropriate arrangements for that assistance. Immediate changes to course work requirements will only be applied in the event of emergency situations.

ATTENDANCE POLICY: Regular attendance is expected at all times. College courses require your participation and can become extremely difficult if class time is missed. However, because unexpected situations do arise, you will be allowed two session absences, which I will count as “freebies”. For students with more than two session absences, the policy is as follows: 3 absences: an “excessive absence” warning letter is sent
4 absences: final course grade decreased by one letter grade
5 absences: **automatic withdrawal** from the course

Being present for class is defined as being on time for class and remaining for the entire period. Students coming late to class will be marked as absent. Be warned.

Exceptions to the above policy may be made at the discretion of the instructor. This usually occurs only in the case of **documented** excused absences, such as medical emergencies (with a doctor’s note), or other major unforeseen occurrences. Normal sick days, vacations and conflicts between class and your work do not count as excused.

A course grade of F will be assigned to any student with 8 or more absences. This policy will be applied whether or not the absences are excused or unexcused.

ACADEMIC INTEGRITY AND COLLABORATION:

Each student is expected to act in complete compliance with the college policy regarding academic honesty. A student caught cheating on any test or assignment will receive a zero grade. At the discretion of the instructor, an automatic course grade of F may be assigned in extreme cases. You may discuss general ideas of how to approach an assignment, but each student should calculate the answers themselves. You must abide by the following rules:

- You may work with another person on assignments but each person should through the complete problem themselves.
- You may not simply show another student your solution to an assignment, nor look at his/her solution for any reason until after assignment grades have been finalized.
- You may not work with another person on quizzes or tests. These must be completed independently.
- You may not post your homework code online to ask others for help. This includes public message boards, forums, file sharing sites and services, or any other online system.

Under our policy, a student who gives inappropriate help is equally guilty with one who receives it. Instead of providing such help to someone who does not understand an assignment, point them to other class resources such as lecture examples, the textbook, LMS, or instructor. Please be careful, and contact the instructor if you are unsure whether a particular behavior falls within our policy.

Course schedule:

A complete course schedule will be maintained on LMS. Plan to meet every MWF except for the following:

January 27	Tuesday	Classes Begin
March 5	Thursday	Down Grades Due
March 6	Friday	Conference – No Class
March 13	Friday	Midterm – Online Exam – No Class
March 14	Saturday	Spring Break Begins – No Class
March 22	Sunday	Spring Break Ends – Class on Monday
April 3	Friday	Easter Break – No Class
May 1	Friday	Awards Convocation (noon – 1pm) We still have class
May 6	Wednesday	Final Day of Class
May 8	Friday	All Schools Day – No Class
May 12	Tuesday	Final Exam: 8am-10am *

*NOTE: You must notify me before Spring Break, March 14, if there is any acceptable reason that you need to take the final exam at a different time.

DISCLAIMER: Changes in the syllabus and/or schedule may be made at any time during the term by announcement in class or on-line. It is the student’s responsibility to check on-line regularly for additional course information. The instructor will communicate all substantial modifications both to the Chief Academic Officer and to students enrolled in the course, prior to enacting these modifications. There is a lot of material – we will concentrate on what will help you the most in the real world.

ONE FINAL NOTE: Survey of Mathematics is not intended to be a difficult course. However, I recognize that mathematics can be challenging for many people. Please feel free to visit me in my office frequently if you require extra help outside of class time. I will be happy to help you out with this stuff and I can arrange a schedule that meets your needs. If problems arise, please let me know. I would like this to be an enjoyable semester for all of us!

