

MAT 2-110 Great Mathematical Ideas

October 2016

Course Outline

Instructor: Professor Tony deLaubenfels

Office: Law 222

Office Hours: 2:30 - 3:30 p.m. Monday through Friday

Office Phone: Extension 4295 **Home Phone:** 895-8336

E-mail address: tdelaubenfels (tdelaubenfels@cornellcollege.edu from off campus)

Text: Chaos and Fractals An Elementary Introduction by David P. Feldman, Oxford University Press, 2012.

Class meetings: There will be Lecture/ Discussion each morning from 9 a.m. until around 11 a.m. and afternoon class each afternoon from 1:15 p.m. until 2:30 p.m in our Law Hall classroom.

Exam schedule:

Exam 1	Chapters 1-14	Wednesday, October 12
Exam 2	Chapter 15-27	Friday, October 21

Evaluations: Your grade will be based on your performance on homework and exams according to the following schedule:

Exam 1	100 points
Exam 2	100 points
Homework, Quizzes, Presentation	<u>100 points</u>
TOTAL possible	300 points

Grade cutoffs (percentages):

A 92

A- 90

B+ 88

B 80

B- 78

C+ 75

C 65

C- 60

Course objectives:

This course supports the Educational Priorities and Outcomes of Cornell College with emphasis on knowledge, inquiry, reasoning, and communication.

Study of dynamical systems including nonlinear phenomena and their dynamics leading to chaos and complexity, sensitivity to initial conditions, small changes and large effects.

Exploration of diverse concepts in fractal geometry including self-similarity, deterministic and non-deterministic approaches to fractals, iteration, and scaling laws.

Policies:

1) **Assignments.** I expect students to spend about 25 hours a week, outside of class, reading the text and working exercises. Homework exercises will be assigned daily, but will not normally be handed in.

2) **Attendance and classroom protocols.** Class attendance and participation is expected. I do not take attendance, but many days there will be some sort of work (quizzes or activities) that you will need to be in class to complete. During class you are allowed to use computers to take notes (this is difficult in a mathematics course) but you should not use e-mail, browsers, ims, etc. No texting in class, please.

3) **Drop Policy.** I follow the official college drop policy; i.e. in order to be eligible for a third Friday drop, you must attend class and complete all course work.

4) **Academic Integrity.** Cornell College expects all members of the Cornell community to act with academic integrity. An important aspect of academic integrity is respecting the work of others. A student is expected to explicitly acknowledge ideas, claims, observations, or data of others, unless generally known. When a piece of work is submitted for credit, a student is asserting that the submission is her or his work unless there is a citation of a specific source. If there is no appropriate acknowledgment of sources, whether intended or not, this may constitute a violation of the College's requirement for honesty in academic work and may be treated as a case of academic dishonesty. The procedures regarding how the College deals with cases of academic dishonesty appear in The Compass, our student handbook, under the heading "Academic Policies – Honesty in Academic Work."

5) **Accommodation.** Students who need accommodations for learning disabilities must provide documentation from a professional qualified to diagnose learning disabilities. For more information see cornellcollege.edu/disabilities/documentation/index.shtml

Students requesting services may schedule a meeting with the disabilities services coordinator as early as possible to discuss their needs and develop an individualized accommodation plan. Ideally, this meeting would take place well before the start of classes. At the beginning of each course, the student must notify the instructor within the first three days of the term of any accommodations needed for the duration of the course.