MATH 489: DYNAMICS AND DIFFERENTIAL EQUATIONS, FALL 2018: SYLLABUS, GRADING, AND COURSE POLICIES

Instructor: Professor Leisman
Office: 165 Altgeld
Email: kleisman@illinois.edu

Course Class Room: 341 Altgeld
Course Website: https://faculty.math.illinois.edu/~kleisman/courses/m489_fall18/math489.html

Course Meeting Time: Tuesday, Thursday, 11-12:20 pm.

Office hours (will take place in my office):
Tuesdays 3:30-5:30 pm (No appointment needed)
An additional hour TBD will often be posted on the website each week. (If it is posted, you don’t need an appointment) Otherwise by appointment: schedule a time with me after class or by email (I am also usually happy to try to answer questions by email).

Textbook
Chaos: An Introduction to Dynamical Systems
Author: K Alligood, T Sauer, J Yorke

What We Expect of You
• Come to class
• Pay attention and take as good of notes as you are able, speak up if you are confused - likely others are as well!
• Spend about 4-5 hours a week on homework or studying for this class
• Do homework on time
• Come to office hours at least when you need too
• Be engaged in your own education

What You can Expect of Professor Leisman
• Explain the topics and methods as well as I am able
• Be available for you in office hours
• Get your exams back in a timely manner

What you can Expect of the TA
• Grade your homework in a fair and timely manner

Grading
(1) Homework: 25%
   Homework will be assigned weekly, usually due on Thursdays at the beginning of class. A subset of the assigned problems will be graded for accuracy.
   • Due at the beginning of class – if it is not turned in by 11:05, it will be considered late!
   • I will not accept any excuses for late homework. However, I will drop the lowest 1, so save these for emergencies.
   • 15% off per class period late, not accepted after it’s been returned. (Note that generally homework will be returned within two or three class periods.)
   • Number your problems appropriately (according to numbering in book or on problem sheet)
   • Please draw a box around your final answer when applicable.
   • Please note: you are welcome (encouraged) to work on homework in groups, but absolutely turn in individual work. Also, please write on the top of your homework: “I worked on (part of) this with ......”
   • I will accept neat hand written homework or typed homework (perhaps LaTeX).

Date: August 23, 2018.
• Some homework may require code. Please print all code and its output, but do what you can to conserve paper (double sided is fine).

(2) Exams: 3 exams at 15% each = 45% total
• Exams will take place during class time in Altgeld 341.
  – Tuesday, September 25
  – Tuesday, October 30
  – Thursday, December 6
• Missing an exam without contacting me prior to the exam time may result in a zero on the exam. Missed exams without proper documented excuse may result in a penalty. See policies section for details.

(3) Final Exam (Wednesday, December 19, 8-11 am): 25%

(4) Participation: 5%
• Come to class on time. Do ask questions in class. Do pay attention, respond, interact in class. Do email me with questions or comments. Do come to office hours. If I don’t know who you are by the end of the semester, that doesn’t bode well for these 5 points.

The course grade will be obtained numerically based on the scheme described above. Letter grades will be assigned according to a scheme that is not worse than the following: 90s are As, 80s are Bs, 70s are Cs, 60s are Ds, 50s and lower is F. Please note: I do not curve scores to a specific distribution, but I may stretch this scale if I deem it necessary. Also, if you do better on the final exam than in the rest of the course, I will take that into account.

Learning Outcomes
Upon successful completion of the course:
• Be able to analyze one dimensional and higher dimensional maps for stability of fixed points and periodic solutions.
• Have some idea what chaos is and how it applies to maps.
• Know a little more about fractals.
• Remember much of what you learned in ODEs (or actually understand a little more of it)
• Be able to analyze continuous dynamical systems (linear and nonlinear systems of ODEs), find and classify bifurcations.

Additional Policies
(1) Homework: You are encouraged to work with others on the homework assignments, but each person should turn in their own work. Directly copying answers does not count as collaboration and will result in a zero on the assignment for both parties. Late homework will be accepted until the assignment has been returned to the class, but penalized by 15% for each class period late. For example, if homework was due on Thursday, but you turn it in before class on Tuesday, the best grade you can receive is an 85%; if you turn it in before class the following Thursday, the best grade you can receive is a 70%. Please note that if it is not turned in by 11:05, it will be considered late!

(2) Exams: There will be 3 midterm exams throughout the course. No books, notes, collaboration, calculators, phones, etc will be allowed.

(3) Academic Integrity on Exams: All work submitted in an exam must be your own. Collaborating on an examination is not permitted. Academic dishonesty may result in an exam or quiz grade of zero and a report to the powers that be. Just don’t cheat. If you need help, ask me or find a tutor or a homework/study buddy.

(4) Make-Up Exams: If you must miss an exam because of a prior obligation, you must speak to me about it within the first week of class. If you miss an exam for an unforeseen but valid reason (e.g., illness, emergency) you must obtain a WRITTEN EXCUSE (e.g., from a medical professional). If you miss an exam WITHOUT a written excuse, you must contact me within 24 hours to be considered for a make-up exam.

(5) Contesting Grades and Retrieving Graded Work: If you wish to contest a grade, you must speak to the professor within one week of the date the assignment is first returned in class. After this deadline, the grade will be final. Also, if your work is not picked up within one week of the date the assignment is returned in class, you forfeit all rights to contest the grade.

(6) Accommodation for Students with Disabilities: If you need additional accommodations for any reason, you must bring a letter from DRES and I will be happy to accommodate.