

MATH 515 01W: DYNAMICAL SYSTEMS
SUMMER II 2014

CONTACT INFORMATION:

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OFFICE HOURS : TR 2:30-3:30p, otherwise by appt.

DESCRIPTION AND POLICIES:

1. CLASS SCHEDULE: Online (Section 01W)
Office hours will be held online via Skype (email your Skype ID to the instructor), or via Adobe Connect at the website <http://connect.tamuc.edu/coskun> at times indicated above.
2. TEXTBOOK: Dynamical Systems with Applications using Mathematica by Stephen Lynch (ISBN-13: 978-0-8176-4482-6)
3. WEBSITE & INTERNET: An eCollege website has been created for the course which may be accessed from student myLEO accounts following the eCollege and then My Courses tabs. All files and documents, lecture notes and outlines, links to video content, and software modules that the instructor shares with the class will be posted in the Doc Sharing folder in the course website. All material posted at the course website is copyrighted ©. You are allowed to retain one copy of each file for your personal use, but the files should not be distributed in any form without instructor's written consent.
4. COURSE DESCRIPTION: This is an online graduate class covering topics including iteration of functions; graphical analysis; the linear, quadratic and logistic families; fixed points; symbolic dynamics; topological conjugacy; complex iteration; Julia and Mandelbrot sets. Computer algebra systems will be used. Prerequisites: Math 331, or consent of instructor.
5. LEARNING OUTCOMES: Students who complete this course successfully will
 - a) learn the *terminology* of the dynamical system;
 - b) learn the *methods* employed in the field of the dynamical system;
 - c) learn the *applications* of theoretical methods to practical problems.
6. TESTS & PROJECTS: There will be one midterm and one final, both of which are take-home exams. Late work is not accepted.

7. TENTATIVE EXAM SCHEDULE:

Midterm	200 pts	Wednesday July 23, 2014	take-home
Final	200 pts	Thursday August 07, 2014	take-home

8. SOFTWARE: *Mathematica* software is required for the course. It will be used for carrying out computations in discussion sessions, homework exercises, exams and projects. *Mathematica* 9.0 is installed and available in Mathematics computer lab in BIN 328, and in computer labs at the Metroplex center. Personal student licenses may be purchased online at the Wolfram *Mathematica* website <http://www.wolfram.com/mathematica/how-to-buy/education/>.

9. HOMEWORK: Homework will be assigned in every class meeting on a regular basis. Selected assignments and problems will be graded only, but all homework problems should be worked out. The assignments will be turned in electronically (in form of a *Mathematica* notebook) by due dates to the Dropbox for that week at the eCollege website. Student name and homework number should be printed at the top of each notebook. You may work in groups unless otherwise instructed, however the paper you turn in must be your own work. Late homework is not accepted. Homework score is worth 50 points of the total semester grade.

10. GRADING SCALE: All scores will be added and a letter grade will be assigned according to the following table.

A	406 - 450 pts
B	361 - 405 pts
C	316 - 360 pts
D	271 - 315 pts
F	0 - 270 pts

11. TENTATIVE COURSE OUTLINE:

1. Introduction to *Mathematica* (Week 1)
2. Differential Equations (Week 1)
3. Planar Systems and Limit Cycles (Week 2)
4. Bifurcation Theory and Chaos (Week 3)
5. Autonomous Systems (Week 4)
6. Discrete Dynamical Systems (Week 5)

12. OTHER IMPORTANT DATES:

July 28, 2014	Last day to drop a class ?
August 03, 2014	Last day to withdraw from Summer II 2014 ?
August 07, 2014	Last class day

13. MISCELLANEOUS: Your enrollment in this course indicates that you agree to observe all the conditions and regulations of this syllabus and the Student Handbook. The test and homework scores may be filed to be used anonymously for educational research.

It is the student's responsibility to secure the software licenses and other resources (such as a personal computer with proper operating system to run the software, broadband internet access to view the video recordings and participate in online discussion sessions, etc.) to be able to complete and communicate all assignments, tests and projects to the instructor as required. The access information to Library resources, and Help Desk for technical support are available through the eCollege website.

Policies pertaining to scholastic dishonesty are identical to TAMU-Commerce regulations given in the Student Handbook, available online at the website <http://web.tamuc.edu/studentLife/documents/studentGuidebook.pdf>. All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment (See Student's Guide Handbook, Policies and Procedures, Conduct). Disruptive behavior and scholastic dishonesty in any form will not be tolerated.

Students requesting accommodations for a disability should contact the Office of Student Disability Resources and Services, Texas A&M University-Commerce, Gee Library, Room 132, Phone: (903) 886-5150 or (903) 886-5835, Fax: (903) 468-8148, or Email: StudentDisabilityServices@tamuc.edu.

Any possible changes to be made in this syllabus by the instructor during the semester will be announced by email.