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Current Courses

 ◉ ADVANCED CALCULUS 2
 (Spring 2015)

**INTRO TO DYNAMICAL
 SYSTEMS AND CHAOS
 THEORY (Spring, 2015)**

Publications

Curriculum Vitae

ROBERT LONG PRIZE, 2014

Previous Courses

 ◉ ADVANCED CALCULUS 1,
 FALL, 2014

 ◉ MAP2302, ELEMENTARY
 DIFFERENTIAL EQUATIONS,
 FALL 2014

Related Links

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Intro to Dynamical Systems and Chaos (Spring, 2015)

Introduction to Dynamical Systems and Chaos (Spring, 2015)

Professor Louis Block, 478 Little Hall, block@ufl.edu

Time, Location, and Section Number

The class will meet Monday, Wednesday, and Friday, period 7 in Little 207.

Students may register for MTG5412 section 17F7 or MAT4930 section 155C.

Recommended Text (not required)

An Introduction to Chaotic Dynamical Systems (second edition) by Robert L. Devaney. (Now published by Perseus Publishing Company, a division of Harper/Collins.)

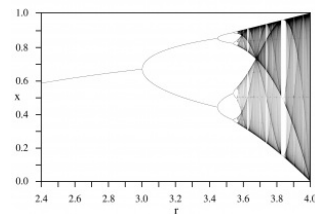
Description

We will introduce some of the mathematical theory of nonlinear dynamical systems. We will study the dynamics of continuous functions under iteration. Topics include: Maps of the interval, Sharkovsky's Theorem, the bifurcation diagram for the quadratic family, Bernoulli shifts, minimal sets, and complex dynamics. While much of the material we cover may be found in the text, we will not closely follow the text. So regular attendance will be important.

The only prerequisite for the course is the completion of a complete calculus sequence. However, some experience with mathematical proofs would be helpful.

Course Material and Diagrams

Links will be added here as the course progresses. Below are bifurcation diagrams which will be discussed in class.



AA-2-logistic-map-bif

[Click here for some basic material on metric spaces.](#)

Grading

Grading will be based on attendance, class participation, and take-home problem sets. Most of the problems will involve writing mathematical proofs.

Office Hours

Monday period 5, Wednesday period 6, and Friday period 5.

Course Policies

- ◼ **Closed-book policy:** No use of calculators, or books will be allowed during any in-class tests.
- ◼ **Policy related to make-up exams:** Written medical documentation is required for make-up exams.
- ◼ **Policy on class attendance:** Daily attendance is required as consistent with university policies that can be found in the online catalog at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.
- ◼ **University's honesty policy:** UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code". On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor.
- ◼ **For students with disabilities:** Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.
- ◼ **Students' evaluations of the course:** Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.
- ◼ **Additional Information and Links:**

Grades: Grading will be in accord with the UF policy stated at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

Honor Code: "UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or

concerns, please consult with the instructor or TAs in this class.”

Class Attendance: “Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.”

Accommodations for Students with Disabilities: “Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc/>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.”

Online Evaluations: “Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.”

Contact information for the Counseling and Wellness Center:
<http://www.counseling.ufl.edu/cwc/Default.aspx>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

