Instructor: John Harlim
Office: SAS 3260, x32374
Email: jharlim@ncsu.edu
Office hours: Thursday 1-3 PM

Time and Place: MWF 11.20-12.10, RD 461 (Riddick Hall)
Prerequisites: MA 341 and MA405.
Topics: Maps, orbits, bifurcations, topological dynamics, chaos, Lyapunov exponents, fractals, invariant measure.
Grades: 4 homeworks (40% total), final (30%), and an individual class project (written part 15% and oral part 15%). At the end of the semester, your total will be translated into a grade on the usual 90% for A, 80% for B, etc.

Homework: Homework will be assigned roughly every 4 weeks and late submissions will not be accepted under any circumstances. I will collect the last homework on the final week of the class. I will post the \LaTeX source and pdf files of each homework problem set at:
http://www.math.ncsu.edu/~jharlim/ma537.htm
Homework must be in typeset and I only collect the hardcopy. I recommend you to use \LaTeX since it’s not fun to type equations with MS words. You may consult [7, 8] for good introduction to \LaTeX.

Final: Final is scheduled on May 9th, 8-11AM. This schedule is set by the university at http://www.ncsu.edu/registrar/calendars/examsprg.html.

Project: At the end of the semester, you will give a 15-minutes oral presentation on your class project at a level that will be understood by everyone in the class. Possible topics for your class project include the challenges at the end of each chapter of [1]. I will provide a list of possible topics and the related reading list. If you prefer different topic, let me know so we can arrange it. Each topic can only be covered by one person, so please start early and arrange the topics as soon as possible so I can post which topic has been taken. The written part of the project is due on the last day of the class on April 27.

Computing: It is your responsibility to become familiar with the NCSU computing environment. I encourage you to do your computing in MATLAB since it is the most convenient relative to Fortran and C. You may consult [6] for a good introduction to MATLAB. You are encouraged to test software “dynamics” [5] which can be downloaded for different platform for free through: http://yorke.umd.edu/dynamics/. Other useful source of dynamical systems’ software is http://www.enm.bris.ac.uk/staff/hinke/dss/

Exams: All exams are done individually. It is my understanding that your signature on a test means that you neither have nor received unauthorized aid. You are responsible for
understanding and following the university policy on academic integrity:
http://www.ncsu.edu/provost/academic_policies/integrity/reg.htm

Missed Exams: I will only provide a makeup exam for those students who missed the final
with either a certified medical excuse or prior to my approval. The makeup test will be fair
but comprehensive and challenging. Tests missed with certified medical excuses or prior to
instructor approval will be dealt with individually. Note: If you show up to take the test, you
must take the grade. You cannot decide midway through to walk out and take the makeup
exam.

Students with Dissabilities: Reasonable accommodations will be made for students with
verifiable disabilities. In order to take advantage of available accommodations, students must
either register with Disability Services for Students at 1900 Student Health Center, Campus
Box 7509, 515-7653. http://www.ncsu.edu/provost/offices/affirm_action/dss/

Text: Your required text is [1]. The remaining references are for further readings.

References


Wesley, 1989.


