SPRING 2013 Course Syllabus

Course: Mathematics 3046.001. Course Title: Differential Equations with Computer Lab
Time: TR 12:30-1:50. Place: BA 205. Lab: Wed. 2:00-2:50 Tuttleman 9
Instructor: Hill, David R. Instructor Office: 512 Wachman Hall. Office Hours: TO BE Announced
Instructor Email: dhill001@temple.edu.
Instructor Phone: 215-204-1654 Email: dhill001@temple.edu.
Teaching Assistant: Scott Ladenheim, 523 Wachman Hall, Office Hours: Mon. 1-3, Thurs. 2-4, others by appointment Email: saladenh@temple.edu
Course Web Page: http://astro.temple.edu/~dhill001/
Prerequisites: Math 1042 with a grade of C or better and Linear Algebra; Math 2043 can be taken concurrently. (Note: Linear algebra is a prerequisite; not concurrent.)


The books are available as a binder-ready book packaged with the lab manual; ISBN-10 0321911040 or ISBN-13 9780321911049. An order has been placed with the book store. You may not be able to get this package online unless you go directly to Pearson Education web site.

Course Goals: This course combines traditional material with a modern systems approach. It presents a thorough introduction to differential equations, tempering a classic "pure math" approach with more practical applied aspects. The course covers key topics such as first order equations, matrix algebra, numerical methods, systems, and phase plane portraits. The focus is on interpreting and solving problems through the use of software support and technology projects. Using software tools graphics will be used to display the ideas in ODEs; modeling and applications; and projects. An objective is to provide students with the opportunity to bring together much of what they have learned, including analytical, computational, and interpretative skills.

Topics Covered: First order differential equations, second and higher order linear equations via a systems approach using linear algebra, introduction to numerical methods, and possibly Laplace transforms.

Course Grading: Homework, Lab and Quizzes 30%, Tests 45% and a Comprehensive Final 25%

Exam Dates: In class exam dates to be announced. FINAL EXAM Thursday May 9 10:30-12:30
Attendance Policy: Attendance to all lectures, labs, quizzes, and exams is required.
Calculators: You are expected to have available for use on homework, quizzes, and exams a scientific calculator. It is recommended that your calculator be equivalent to a TI83.
Computational facilities: MATLAB will be used extensively for homework and lab. Ideally you should have a personal computer with MATLAB installed. MATLAB is a free download for TU students.
Flash drive: YOU WILL NEED A FLASH DRIVE; BRING IT TO CLASS & LAB.
Classroom policies: Turn off all electronic devices including cell phones, MP3 players, etc. No head phones or ear buds permitted.
Make up Policy: There are no make ups for quizzes, homework, labs, or exams.
Notes: You are expected to take notes and coordinate items in lectures to material in the text book.
BLACKBOARD: There may be some use of Blackboard. (to be determined.)
Any student who has a need for accommodation based on the impact of a disability should contact me privately to discuss the specific situation as soon as possible. Contact Disability Resources and Services at (215) 204-1280, 100 Ritter Annex, to coordinate reasonable accommodations for students with documented disabilities.

Freedom to teach and freedom to learn are inseparable facets of academic freedom. The University has adopted a policy on Student and Faculty Academic Rights and Responsibilities (Policy # 03.70.02) which can be accessed here.

Students will be charged for a course unless a withdrawal form is processed by a registration office of the University by the Drop/Add deadline date given below. For this semester, the crucial dates are as follows:

- The first day of classes is Tuesday, January 22
- The last day to drop/add (tuition refund available) is Monday, February 4
- The last day to withdraw (no refund) is Tuesday, March 26
- Spring Break: March 10 -17
- The last day of classes is Monday May 6
- Study days: May 7 & 8
- Finals: Thursday May 9 – Wed May15

During the first two weeks of the fall or spring semester or summer sessions, students may withdraw from a course with no record of the class appearing on the transcript. In weeks three through nine of the fall or spring semester, or during weeks three and four of summer sessions, the student may withdraw with the advisor's permission. The course will be recorded on the transcript with the instructor's notation of "W," indicating that the student withdrew. After week nine of the fall or spring semester, or week four of summer sessions, students may not withdraw from courses. No student may withdraw from more than five courses during the duration of his/her studies to earn a bachelor's degree. A student may not withdraw from the same course more than once. Students who miss the final exam and do not make alternative arrangements before the grades are turned in will be graded F.

The grade I (an "incomplete") is reserved for extreme circumstances. It is necessary to have completed almost all of the course with a passing average and to file an incomplete contract specifying what is left for you to do. To be eligible for an I grade you need a good reason and you should have missed not more than 25% of the first nine weeks of classes. If approved by the Mathematics Department chair and the CST Dean's office, the incomplete contract must include a default grade that will be used in case the I grade is not resolved within 12 months.