The simplicity of nature is not to be measured by that of our conceptions. Infinitely varied in its effects, nature is simple only in its causes, and its economy consists in producing a great number of phenomena, often very complicated, by means of a small number of general laws.

Pierre-Simon Laplace (1749-1827) (http://www-history.mcs.st-andrews.ac.uk/Biographies/Laplace.html)

- **Time and Place.** TR 10:30-11:50 in LART 209
- **Instructor.** Helmut Knaust, Bell Hall 219, hknaust@utep.edu, 747-7002
- **Office Hours.** T 15:00-16:20, R 8:30-10:20, or by appointment.
- **Other Sources of Help.**
  - Consult the differential equations section of S.O.S. Mathematics (http://www.sosmath.com/diffeq/diffeq.html) online.
  - Visit the MaRCS Tutoring Center in the Library.
- **Textbook.** Paul Blanchard, Robert L. Devaney, Glen R. Hall. *Differential Equations.* Brooks/Cole, 3rd edition. The parts of the textbook covered in class are intended to be read in advance.
- **Prerequisites.** I will assume that you have a thorough knowledge of the material covered in your Precalculus and your first two Calculus courses. In particular, it is essential that you are comfortable with techniques of integration and the method of partial fractions.
- **Course Contents.** The course will cover the following material:
  - Chapter 1.1-1.9 (4 weeks)
  - Chapter 2.1-2.4 (2.5 weeks)
  - Chapter 3.1-3.7 (4 weeks)
  - Chapter 5.1-5.2 (1.5 weeks)
  - Chapter 6.1-6.4 incl. selected topics from Chapter 4 (2.5 weeks)
- **Course Objectives.** During the course you should expect (and I will expect) that you make considerable progress in the following areas:
  1. Apply standard techniques to analyze and solve ordinary differential equations: using analytical, numerical and qualitative methods; using the method of the Laplace transform.
  2. Be able to model with differential equations and interpret the results of their mathematical analysis.
  3. Understand the fundamental difference between linear and non-linear differential equations.
  4. Improve your ability to communicate Mathematics effectively in written form.
- **Homework.** I will regularly assign homework. The homework will be (at least partially) graded. Homework assignments will also include reading assignments. Homework will account for 15% of your grade.
- **Tests.** Exams will be given on the following dates: Thursday, **September 17**, Tuesday, **October 13** and Thursday, **November 12**. Each exam counts 20% of your grade.
- **Make-up Exams.** Make-up tests will only be given under extraordinary circumstances, and only if you notify the instructor prior to the exam date.

- **Final exam.** The final on **Thursday, December 10, 10:00-12:45** is mandatory and comprehensive. It counts 25% of your grade.

- **Grades.** Your grade will be based on the percentage of the total points that you earn during the semester. You need at least 90% of the points to earn an A, at least 80% for a B, at least 70% for a C, and at least 60% for a D.

- **Calculators.** You may use a **non-graphing** calculator (not a cell phone, etc.) during tests and the final. If you have doubts about whether your calculator qualifies, ask me before the first test.

- **Time Requirement.** I expect that you spend an absolute minimum of six hours a week outside of class on reading the textbook, preparing for the next class, reviewing your class notes, and completing homework assignments. Not surprisingly, it has been my experience that there is a strong correlation between class grade and study time.

- **Attendance.** You are strongly encouraged to attend class every day. I expect you to arrive for class on time and to remain seated until the class is dismissed. Students with five or more absences (excused or unexcused) will be dropped from the course with a grade of "F".

- **Drop Policy.** The class schedule lists Friday, October 30, as the last day to drop with an automatic "W". After the deadline, I can only drop you from the course with a grade of "F". Beginning with the fall 2007 semester, all freshmen enrolled for the first time at any Texas public college or university will be limited to six course withdrawals (drops) during their academic career. Drops include those initiated by students or faculty and withdrawals from courses at other institutions! This policy does not apply to courses dropped prior to census day or to complete withdrawals from the university.

- **Students with Disabilities.** If you have a disability and need special accommodation, please contact the Disabled Student Services Office (DSSO) in Union East 106, 747-5148, dss@utep.edu  

- **Academic Integrity.** All students must abide by UTEP's academic integrity policies, see [http://academics.utep.edu/Default.aspx?tabid=23785](http://academics.utep.edu/Default.aspx?tabid=23785) for details.

### Homework

### Software

- Wolfram Alpha ([http://www.wolframalpha.com](http://www.wolframalpha.com))

Retrieved from "[http://servac.math.utep.edu/courses/CRN_13221](http://servac.math.utep.edu/courses/CRN_13221)"