

Northern Arizona University
College of the Environment, Forestry, and Natural Sciences
Department of Mathematics and Statistics

MAT 661 (Applied Mathematics) Syllabus

Fall 2018, Section 1 (Class Number 8710)

3 Credit Hours, MWF 9:10-10:00 in Student Academic Services 201

Instructor Information

Instructor: Jim Swift Adel Math Bldg. 110 523-6878 Jim.Swift@NAU.edu

Office Hours: Mon 4-5, Tu 10:30-11:30, Wed 4-5, Th 10-11, 2-3. If these times are inconvenient, you can make an appointment, or drop by my office any time.

Websites: You can type in nau.edu/Jim.Swift or search for me to get to my web site. Follow the “Instructor Information” link. On that page, there is a link to the web site for this class, as well as a link to official U.S. time, <http://www.time.gov>, that our class will observe. I use BbLearn sparingly.

Course Description

Text: *Introduction to Partial Differential Equations with Applications*, by Zachmanoglou and Thoe (Dover Edition).

Prerequisite: A grade of C or better in MAT 238 (Calculus 3), MAT 239 (Differential Equations), and MAT 316 (Linear Algebra), or the equivalent. While that is the formal prerequisite, this is a graduate course in mathematics and a high level of mathematical maturity is assumed.

Content/Outline: This is a course about Partial Differential Equations (PDEs). The catalog description is “Analysis of the equations of mathematical physics and science, including ordinary and partial differential equations, eigenfunction expansions, and related advanced topics.”

Student Learning Outcomes: The students will learn how partial differential equations are used to model some physical systems. The student will learn pencil-and-paper as well as computer techniques for solving first and second order PDEs.

Course Structure The class will use lecture-discussion format.

Assessment of Student Learning Outcomes

Homework: (1/3 of the final grade) You know by now that it is necessary to practice math to learn it. You are *allowed* and *encouraged* to work together on homework.

Midterm: (1/3 of the final grade) There will be 2 closed-book, in-class midterms, on approximately October 8 and November 19-28.

Final Exam: (1/3 of the final grade) The Final Exam is scheduled for Wednesday, December 12 from 7:30 to 9:30 am!

Course Policies

Calculators and Computers: Most of the work in this class does not require calculators. There will be some use of computers, but I will assume only minimal programming experience.

Late Homework: I will handle requests on a case-by-case basis, but please contact me before the due date.

Missed Class Days: It is important and required that you come to class every day. I will give excused absences for institutional excuses, illness, or other reasons that I approve. Please notify me of an absence by e-mail or voice mail *before* class if possible. Furthermore, if you are late and I take roll before you arrive, then you will be counted absent.

Makeup Exams: A similar policy to “Missed Class Days” holds. I will give a makeup exam for illness or other emergencies. Please notify me that you will miss an exam by e-mail or voice mail *before* the exam if possible. I may give an exam the day before Thanksgiving; if so you may take the exam early on the Tuesday before Thanksgiving.

Academic Honesty: Do not look at other people’s exams during in-class tests. You may not use cell phones or other electronic communication devices during the exams. You may seek help from me and other students for the homework, but please do your own work.

University and Departmental Policies: Our class web site has links to the Departmental and University Policies at
Our class web site has links to the Departmental and University Policies at
<http://www.nau.edu/Jim.Swift/classes/MathDepartmentPolicies.pdf> and
<https://nau.edu/University-Policies/>.

Amendments: Any changes to this syllabus will be announced in class, and an updated version will be posted on my website. This version: August 29, 2018