

ENGINEERING ANALYSIS
MAE 3360 Fall 2009, TR 12:30PM-1:50PM, 208 WH

Instructor's Name: Prof. Cheng Luo

Office hours: MW 1:20-2:20PM and 4PM-5PM, or by appointment.

Location and contact information: 215 Woolf Hall; Tel: (817) 272-7366; Email: chengluo@uta.edu.

Teaching assistant: TBD

Course Prerequisites: Prerequisite: MATH 2326 "Calculus III" and MAE 2360 "Numerical Analysis and Programming" (or equivalent).

Required Textbooks and Other Course Materials:

Text: *Advanced Engineering Mathematics*, 3rd edition, Dennis G. Zill and Michael R. Cullen (Jones and Barlett).

Description of Course Content: Mathematical analysis with emphasis on solution techniques and engineering applications. Topics include: ordinary differential equations, Laplace transform, numerical solutions of ODE, boundary value problems, Fourier series and vector calculus. Chapters 2-6, 9 and Sections 12.1-12.4 will be covered.

Course website: <http://www-woolf.uta.edu/mae3360/>; Login=mae3360; Password =22methods62; All course material (syllabus, homework, solutions, announcements, etc.) will be posted on this web site.

Grading: Final grade based on: Homework 30%, Attendance 5%, Two mid-Term 2x20%, and Final 25%.

Grading Scale: A =100-90%, B =89-80%, C =79-70%, D =69-60%, F =below 60%.

NOTE:

- All assignments (i.e. homeworks and examinations) must be the independent work of each student.
- Submitting homework one day late will lose 10% of the score, two days will be 20%, and so on and so forth. *Unless otherwise specified, homework is due in class one week after its assignment.*
- The instructor will check the attendance randomly for totally 5 times during this semester. Missing the attendance once will lose 1% of the final grade, twice 2%, and so on and so forth.
- Only university acceptable excuses will be accepted for giving back the points deducted due to late homework submissions and/or absence of lectures.
- The three exams (two mid-term and one final) are designated as key assignments. In order to pass this class, students must submit and pass all key assignments. If any key assignment is not submitted and passed, the student will not pass the class even if he/she scores perfectly on all exams and other assignments.

Drop Policy: Please refer to the University drop policy. Last day to drop courses is 10/30.

Americans with Disabilities Act:

The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal opportunity legislation; reference Public Law 92-112 – The Rehabilitation Act of 1973 as amended. With the passage of federal legislation entitled *Americans with Disabilities Act (ADA)*, pursuant to section 504 of the Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens.

As a faculty member, I am required by law to provide “reasonable accommodations” to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty of their need for accommodation and in providing authorized documentation through designated administrative channels. Information regarding specific diagnostic criteria and policies for obtaining academic accommodations can be found at www.uta.edu/disability. Also, you may visit the Office for Students with Disabilities in room 102 of University Hall or call them at (817) 272-3364.

Academic Integrity:

It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University.

“Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or part to another person, taking an examination for another person any act designed to give unfair advantage to a student or the attempt to commit such acts.” (Regents’ Rules and Regulations, Series 50101, Section 2.2)

Student Support Services Available:

The University of Texas at Arlington supports a variety of student success programs to help you connect with the University and achieve academic success. These programs include learning assistance, developmental education, advising and mentoring, admission and transition, and federally funded programs. Students requiring assistance academically, personally or socially should contact the Office of Student Success Programs at (817) 272-6107 for more information and appropriate referrals.

E-Culture Policy:

The University of Texas at Arlington has adopted the University email address as an official means of communication with students. Through the use of email, UT Arlington is able to provide students with relevant and timely information, designed to facilitate student success. In particular, important information concerning registration, financial aid, payment of bills, and graduation may be sent to students through email. All students are assigned an email account and information about activating and using it is available at www.uta.ed/email. New students (first semester at UT Arlington) are able to activate their email account 24 hours after registering for courses. There is not additional charge to students for using this account, and it remains active as long as a student is enrolled at UT Arlington. Students are responsible for checking their email regularly.

Tentative Lecture Schedule on Mondays and Fridays:

<u>No#</u>	<u>Date</u>	<u>Course Description</u>
1	08/25	Introduction
2	08/27	Separable differential equations (Section 2.2)
3	09/01	Exact differential equations-I (Sections 2.4-2.5)
4	09/03	Exact differential equations-II (Sections 2.4-2.5)
5	09/08	Linear differential equations and modeling (Sections 2.3 and 2.7-2.9)
6	09/10	Solution curves, and existence of solution (Section 2.1)
7	09/15	Higher order ODE linear equations (Section 3.1)
8	09/17	Homogeneous linear equations-I (Sections 3.2-3.6)
9	09/22	Homogeneous linear equations-II (Sections 3.2-3.6)
10	09/24	Homogeneous linear equations-III (Sections 3.2-3.6)
11	09/29	Homogeneous linear equations-IV (Sections 3.2-3.6)
12	10/01	Nonlinear equations (Section 3.7)
13	10/06	Modeling-I (Section 3.8, 3.9 and 3.11) and Review for Midterm Exam #1
14	10/08	Modeling-II (Section 3.8, 3.9 and 3.11)
15	10/13	Midterm Exam #1 (covering Chapters 2 and 3, particularly HWs and lecture materials)
16	10/15	Laplace transform and Translation theorems (Sections 4.1-4.3)
17	10/20	Differentiation, integration and application (Sections 4.4 and 4.5)
18	10/22	Basic formulas of Laplace Transform (Section 4.6)
19	10/27	Power series method (Section 5.1)
20	10/29	Solutions about singular points and Special functions (Sections 5.2 and 5.3)
21	11/03	Numerical solutions of ODE-I (Sections 6.1, 6.2 and 6.4)
22	11/05	Numerical solutions of ODE-II (Sections 6.1, 6.2 and 6.4) and Review for Midterm Exam #2
23	11/10	Vector field and Vector calculus-I (Sections 9.1-9.4)
24	11/12	Midterm Exam #2 (covering Chapters 4-6, particularly HWs and lecture materials)
25	11/17	Vector calculus-II (Sections 9.5-9.8)
26	11/19	Vector calculus-III (Sections 9.9-9.13)
27	11/24	Vector calculus-IV (Sections 9.14-9.17)
28	12/01	Fourier Series-I (Sections 12.1-12.4)
29	12/03	Fourier Series-II (Sections 12.1-12.4) and Review for final exam and Questions
30	12/10	Final Exam (covering Chapters 9 and 12, particularly HWs and lecture materials; 11am-12:20pm in the regular classroom)