

**MAE 3360-001 ENGINEERING ANALYSIS, Fall 2015**  
**Department of Mechanical and Aerospace Engineering**  
**University of Texas at Arlington**

**COURSE SYLLABUS**

**Instructor:** Dr. Adrian Rodriguez  
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**Office Hours:** MWF 12:00 – 1:00 p.m. (or by appointment)

**Course Info:** MAE 3360-001  
Class location: ERB 130  
Class times: MWF 1:00 – 1:50 p.m.

**Description:** Mathematical analysis with emphasis on solution techniques and engineering applications. Topics include: ordinary differential equations (ODE), Laplace Transform, numerical solutions of ODE, boundary value problems, Fourier series, Sturm-Liouville problem and vector calculus.

**Student Learning Outcomes:** This course is intended to provide students with: i) a basic understanding of differential equations and their application to fundamental engineering problems, ii) develop a diverse knowledge of mathematical methods and know how to apply them, and iii) the ability to solve mathematical models for engineering problems.

**Textbook:** “Advanced Engineering Mathematics” by Zill, D.G., and Wright, W.S., 5th ed., Jones and Bartlett Publishers, Burlington, MA, 2014.

**Prerequisites:** C or better in MATH 2326 and MAE 2360 (or concurrent enrollment).

**Attendance/Grading:**

1. Class attendance is not required but strongly encouraged. I will not take attendance but periodic quizzes will be given in class, which may affect your overall grade.
2. Homework will be posted on Blackboard and is due at the beginning of class. Late homework will be penalized 15% per day that it is late (max 3 days – after that it will not be accepted). Include your name, 1000#, and staple all pages.
3. All quizzes/exams will be closed book, closed notes. Final exam will be comprehensive.
4. Any makeup quiz/exam will be given only under extenuating circumstances. Please notify me at least one week in advance via email if you anticipate an excused absence.
5. Students will have the option of dropping their lowest exam grade or all quizzes (quiz avg.) – must take all 3 exams to be eligible. Otherwise, if an exam is missed with an unexcused absence, the exam will be given a zero grade and factored into an average with the quiz average to represent the final 20% of the overall grade.

## GRADING POLICY

HW Avg.	15%
Exams/Quiz Avg. (3)	60%
Final Exam	25%
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Total	100%

## GRADING SCALE

A	90 or above
B	80 – 89
C	70 – 79
D	60 – 69
F	59 or below

**Drop Policy:** Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>).

**Americans with Disabilities Act:** The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act* (ADA). All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability) or by calling the Office for Students with Disabilities at (817) 272-3364.

**Title IX:** The University of Texas at Arlington is committed to upholding U.S. Federal Law "Title IX" such that no member of the UT Arlington community shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity. For more information, visit [www.uta.edu/titleIX](http://www.uta.edu/titleIX).

**Academic Integrity:** Students enrolled in this course are expected to adhere to the UT Arlington Honor Code:

*I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*

*I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the

Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

**Any act of academic dishonesty will result in an F for this course.**

**Electronic Communication:** UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

**Student Feedback Survey:** At the end of each term, students enrolled in classes categorized as "lecture," "seminar," or "laboratory" shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

**Final Review Week:** A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

**Emergency Exit Procedures:** Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is located to the right toward the building's central stairwell. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

**Student Support Services:** UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to [resources@uta.edu](mailto:resources@uta.edu), or view the information at [www.uta.edu/resources](http://www.uta.edu/resources).

## Course Schedule\*\*

Important dates: Labor Day (9/07), Census Date (9/14), Drop Date (11/04), Last Class Day (12/09)

	Monday	Wednesday	Friday
AUG	24	26	28
			Lecture: Syllabus, Ch. 1.1
SEPTEMBER	31	2	4
	Lecture: Ch. 1.2-1.3	Lecture: Ch. 2.1	Lecture: Ch. 2.2
			Homework 1 Due
	7	9	11
	LABOR DAY HOLIDAY	Lecture: Ch. 2.3	Lecture: Ch. 2.3-2.4
	University Closed		Homework 2 Due
	14	16	18
	Lecture: Ch. 2.4-2.5	Lecture: Ch. 2.6	Lecture: Ch. 2.7-2.9
			Homework 3 Due
	21	23	25
OCTOBER	Make-up lecture; Exam 1 Review	Exam 1: Chapters 1 & 2	No class
	28	30	2
	No class	Lecture: Ch. 3.1	Lecture: Ch. 3.3
	5	7	9
	Lecture: Ch. 3.4	Lecture: Ch. 3.5	Lecture: Ch. 3.12
		Homework 4 Due	
	12	14	16
	Lecture: Ch. 4.1	Lecture: Ch. 4.2	Lecture: Ch. 4.3
		Homework 5 Due	
	19	21	23
	Lecture: Ch. 4.4	Lecture: Ch. 4.5	Make-up lecture; Exam 2 Review
		Homework 6 Due	
NOVEMBER	26	28	30
	Exam 2: Chapters 3 & 4	Lecture: Ch. 6.1	Lecture: Ch. 6.2
	2	4	6
	Lecture: Ch. 6.3	Lecture: Ch. 6.4	Lecture: Ch. 7
		Homework 7 Due	
	9	11	13
	Lecture: Ch. 8	Lecture: Ch. 9.2-9.3	Lecture: Ch. 9.4
		Homework 8 Due	
	16	18	20
	Lecture: Ch. 9.5	Lecture: Ch. 9.7-9.8	Make-up lecture; Exam 3 Review
DECEMBER		Homework 9 Due	
	23	25	27
	Exam 3: Chapters 6, 7, 8, & 9	Make-up lecture	THANKSGIVING HOLIDAY
			University Closed
	30	2	4
	Lecture: Ch. 12.1	Lecture: Ch. 12.2	Lecture: Ch. 12.3-12.4
	7	9	11
DECEMBER	Lecture: Ch. 12.5	Lecture: Ch. 13.1-13.2	
		Homework 10 Due	
	14	16	18
	FINAL EXAM (11:00 am – 1:30 pm)		

\*\*As the instructor for this course, I reserve the right to adjust the course schedule in any way that serves the educational needs of the students enrolled in this course.