MAP2302 Elementary Differential Equations

Spring 2023

Course Coordinator: Carol Demas

Instructor	**Carol Demas**	**Dr. Yuli Rudyak**	**Dr. Corey Stone**
Lecture Period	4	5	6
Section	3141	3142	3146
Classroom	LIT109	LIT109	LIT109
office	LIT323	LIT406	LIT441
office hours	MWF 5th Live/Zoom or by appointment		
email	demasc@ufl.edu	rudyak@ufl.edu	c.stone@ufl.edu

Canvas Messages: Check your messages **daily** so that you do not miss any important announcements.

Text: Fundamentals of Differential Equations and Boundary Value Problems by R. Kent Nagle, Edward B. Saff and Arthur David Snider, ISBN-13: 978-0321977106, ISBN-10: 9780321977106. You may use the previous edition and/or the version without boundary value problems if you prefer.

Requirements: A hardwired connection (not wireless) is strongly recommended when working and submitting assignments. It is the student's responsibility to have a reliable internet connection, adequate internet speed and cleared cache and cookies before starting each assignment .

Time commitment: University students are expected to spend at least 3 hours for each hour watching lecture videos in order to keep up with the course material.

Content: We will cover Chapters 1(Introduction), 2(First Order ODEs), 4(Second Order ODEs), 7(Laplace Transforms), and some of 8(Series Solutions). Chapter 6 (Theory of Higher Order Differential Equations) is optional.

Homework: Doing homework is essential to success in this course and is one of the best ways to prepare for quizzes and tests. Online homework is completed in Canvas. Homework is worth 7% of the grade. The lowest two scores are dropped. Each homework has **unlimited attempts**. Students who miss parts of a multiple-part question should feel free to ask about which parts were missed.

Lecture Quizzes: There is a lecture quiz for each lecture with 2-4 pooled questions with **two attempts** each. The lowest two scores are dropped. Lecture Quizzes are worth 7% of the course grade.

Quizzes: There will be ten online quizzes covering 2-4 lectures with **one attempt** each. The lowest two scores are dropped. Quizzes are worth 13% of the course grade. Online quizzes are 30-50 minutes long.

Discussion board: There is one discussion board for each exam period. If you have a question, please show your work and state the assignment from which the problem comes. The question must not have already been asked so read the boards daily. If you ask a question that has been answered in an online conference, you will be directed to watch the video of that conference unless you require specific clarification. Discussion boards are locked at 10 PM the night before each exam.

Practice Exams: Four online practice exams are due on the dates shown in the calendar. Practice exams are worth 4% of your grade. The lowest score is dropped. Each practice exam has one attempt. **Late submissions are not possible** as practice exams may be reviewed shortly after the due date.

Extra Credit: There are five online extra credit sections covering the theory of higher order differential equations worth 2% of your grade. The lowest score is dropped. Each extra credit assignment has two attempts. These are due the night before the final.

Exams: Four evening assembly exams will be given on the dates shown in the calendar. The fourth (final) exam is comprehensive. Each is worth 17.5% of your grade.

Grades: The letter grade will be awarded with Canvas rounding up the display grade (i.e. 89.5 counts as A) as follows:

A	90%-100%	C	70%-74%
A-	87%-89%	C-	67%-69%
B+	85%-86%	D+	64%-66%
B	80%-84%	D	60%-63%
B-	77%-79%	D-	57%-59%
C+	75%-76%	E	0-56%

If you have a grade dispute, please resolve it with your instructor **within a week** of the assignment deadline. Your grade is comprised of the following:

4 Exams 17.5% each
Quizzes 13% (drop two lowest scores)
Homework 7% (drop lowest two scores)
Practice Exams 4% (drop lowest score)
Lecture Quizzes 7% (drop lowest two scores)
Extra Credit 2% (no drops)

Total: 103% (there are three extra credits point built in to the course).

Exam Coverage
Exam 1 covers 1.1-1.4, 2.2-2.6 (L1-L10)
Exam 2 covers 4.1-4.7 (L11-L17)
Exam 3 covers 7.2-7.6, 7.8-7.9 (L18-L24)
Exam 4 is comprehensive, approximately 50% chapter 8 (L25-L28) with the remainder from chapters 1-2, 4, and 7 (L1-24).

Accommodations for students with learning disabilities: Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting disability.ufl.edu/students/get-started

Academic Honesty: The course will be conducted in accord with the University honor code and academic honesty policy which can be found at www.dso.ufl.edu/ sccr/honorcodes/honorcode.php. The Mathematics Department expects you to follow the Student Honor Code. We are bound by university policy to report any instance of suspected cheating to the proper authorities.

In addition, we remind you that lectures and the lecture notes given in this class are the property of the University/faculty member and may not be taped/shared without prior permission from the lecturer and may not be used for any commercial purpose. Students found to be in violation may be subject to discipline under the Student Conduct Code.

Makeup Exams: If you miss an exam with valid documentation, you may take a makeup. If you miss without valid documentation, there will be a 15% penalty. Valid documentation includes documented illlness, school-sponsored activity, death in the immediate family, court-ordered or military appointments, and religious holidays. Scheduled flights do not count as valid documentation so do not make plans for a flight which conflicts with exam dates and times. If you miss a second exam, the comprehensive fourth exam will replace it. Exam makeups are held on Tuesday, April 18.

If you have a conflict with another assembly exam in a course that has a higher course number, please notify the coordinator within the first two weeks of the semester to qualify for a makeup.

If illness or other extenuating circumstances cause you to miss an exam, contact the course coordinator immediately (no later than 24 hours after the exam) by email. Then, as soon as possible after you return to campus, bring the appropriate documentation to the course coordinator.

To be eligible for a make-up you must have completed at least 75% of the course work that has been given so far.

Late submissions: Due date is not do date! Please do not wait begin your assignments the day that they are due. If there are any last minute difficulties with your computer or access, you will be out of luck. Homework, lecture quizzes, and quizzes can be submitted late with a 20% penalty for each day beyond the due date. If documented illness or other extenuating circumstances cause you to miss a deadline for an assignment you will be granted extensions. You must contact the course coordinator for details.

False Late penalties: There is a feature in Canvas associated with late penalties such that if you have completed an assignment on time but review it at a later date, Canvas will assign a late penalty. These penalties must be removed by the coordianator by hand. To prevent such occurances, please keep written records of all your work rather than opening past-due assignments that you have already completed.

Evaluations: Course evaluations are now at https://gatorevals.aa.ufl.edu/

Privacy: Our class sessions, including office hours, may be audio-visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate verbally are agreeing to have their voices recorded.

If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared.

As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

Diversity: The Mathematics Department is committed to diversity and inclusion of all students. We acknowledge, respect, and value the diverse nature, background and perspective of students and believe that it furthers academic achievements It is our intent to present materials and activities that are respectful of diversity: race, color, creed, gender, gender identity, sexual orientation, age, religious status, national origin, ethnicity, disability, socioeconomic status, and any other distinguishing qualities.

Campus Resources:

Health and Wellness U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services. Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.

University Police Department: Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).

UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website.

GatorWell Health Promotion Services: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the GatorWell website or call 352-273-4450.

Academic Resources E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.

Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420.

General study skills and tutoring. Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

Student Complaints On-Campus: Visit the Student Honor Code and Student Conduct Code webpage for more information.

On-Line Students Complaints: View the Distance Learning Student Complaint Process.

Tentative due dates (subject to possible revision)

Mon	Tues	Wed	Thur	Fri
Jan 9	10	11	12	13
				HW1/LQ1 Syllabus Quiz
16	17	18	19	20
holiday		HW2/LQ2	Q1(L1-3)	HW3/LQ3
23	24	25	26	27
HW4/LQ4		HW5/LQ5		HW6/LQ6
30	31	Feb1	2	3
HW7/LQ7	Q2(L4-6)	HW8/LQ8		HW9/LQ9
6	7	8	9	10
HW10/LQ10	Q3(L7-9)		Exam1 (L1-10)	
13	14	15	16	17
HW11/LQ11		HW12/LQ12		HW13/LQ13
20	21	22	23	24
HW14/LQ14	Q4(L11-13)	HW15/LQ15		HW16/LQ16
27	28	March 1	2	3
HW17/LQ17	Q5(L14-15)		Q65(L16-17)	
6	7	8	9	10
	Exam 2 (L11-17)			
13	14	15	16	17
break	break	break	break	break
20	21	22	23	24
HW18/LQ18		HW19/LQ19	Q7(L18-21)	HW20/LQ20
27	28	29	30	31
HW21/LQ21		HW22/LQ22	Q8(L22-24)	HW23/LQ23
April 3	4	5	6	7
HW24/LQ24				
10	11	12	13	14
	Exam 3 (L18-24)			HW25/LQ25
17	18	19	20	21
HW26LQ26	Q9(L25-26)	HW27/LQ27		HW28/LW28
	Exam 1-3 makeup			
24	25	26	27	28
	PE4/Q10(L27-28)	EC	Reading	Reading

HW: 28 homework (unlimited attempts, drop 2 lowest) due 11:59 PM
LQ: 28 lecture quizzes (two attempts, drop 2 lowest) due 11:59 PM
Q: 10 quizzes (1 attempt, drop 2 lowest) due 11:59 PM
PE: 4 practice exams (1 attempt, drop 1 lowest) due 11:59 PM
EC: 5 extra credit assignments (2 attempts, no drops) due 11:59 PM
Final Exam date (L1-28): Saturday April 29 10:00 AM-12:00 Noon

Tentative Lecture Schedule (subject to possible revision)

Mon	Tues	Wed	Thur	Fri
Jan 9	10	11	12	13
Intro/L1		L2		L3
16	17	18	19	20
holiday		L4		L5
23	24	25	26	27
L6		L7		L8
30	31	Feb1	2	3
L9		L10		L11
6	7	8	9	10
Review	Q3(L7-9)	Review	Exam1 (L1-10)	L12
13	14	15	16	17
L13		L14		L14
20	21	22	23	24
L15	Q4(L11-13)	L16		L17
27	28	March 1	2	3
L17	Q5(L14-15)	L18		Review
6	7	8	9	10
Review	Exam 2 (L11-17)	L19		L20
13	14	15	16	17
break	break	break	break	break
20	21	22	23	24
L21		L22	Q7(L18-21)	L23
27	28	29	30	31
L24		L25	Q8(L22-24)	Catch up
April 3	4	5	6	7
L25		L26		Review
10	11	13	13	14
Review	Exam 3 (L18-24)	L27		L28
17	18	19	20	21
L28	Q9(L25-26)	EC1/2/3		EC3/4/5
	Exam 1-3 makeup			
24	25	26	27	28
Review	PE4 Q10(L27-28)	Review	Reading	Reading

Lecture Topics and Tentative Book HW for extra practice (not collected for grade)

Ed.		7th (mechanical clock)	6th (apple)
Lec	section	problems	problems
1	1.1 Background	1-11 odds	same
2	1.2 Solutions and IVPs	1-11 odds, 21-27 odds	same
3	1.3 Direction Fields	1-7 odds, 11-17 odds	same
4	1.4 Euler Method	1,3,5, take two steps only	same
5	2.2 Separable	1-25 odds	same
6	2.3 Linear	1-21 odds	same
7	2.4 Exact	1-25 odds	same
8	2.5 Exact w/ Integrating Factor	1-11 odds	same
9	2.6 Substitutions	1-27 odds	same
10	1st order apps	2.4 33, 3.2 23-25 3.3 1-5 odds	same
11	4.1 Mass Spring Oscillator	1-9	same
12	4.2 Linear 2nd Order	1-19 odds, 27-31 odds	same
13	4.3 Complex Roots	1-25 odds	1-17 odds, 21-25 odds
14	4.4 Undetermined Coefficients	1-25 odds, 27-31 odds	same
15	4.5 Superposition	9-35 odds	11-19 odds, 23-25 odds, 31-35 odds
16	4.6 Variation of Parameters	1-9 odds,11	same
17	4.7 Variable Coefficients	1-13 odds,19-20,41-44	1-13 odds,19-20,37-39 odds, 45-47 odds
18	7.2 Laplace Transform	1-19 odds	same
19	7.3 Properties	1-9 odds,13-17 odds, 25	same
20	7.4 Inverse Laplace Transform	1-25 odds	same
21	7.5 Solving IVPs	1-7 odds, 12, 15-23 odds	same
22	7.6 Discontinuous Functions	1-17 odds, 21-23 odds, no sketch	1-17 odds
23	7.8 Convolution	1-21 odds, 23, 25	**7.7** 1-21 odds, 23, 25
24	7.9 dirac delta	1-17 odds, no sketch, 25, 27	**7.8** 1-17 odds, no sketch, 25, 27
25	8.1 Taylor Polynomial	1-5 odds, 9a	same
26	8.2 Power Series	1-5, odds, 11-13 odds,17-27 odds, 29, 33	same
27	8.3 Power Series Solutions	1-27 odds	same
28	8.4 Analytic Coefficients	1-15 odds	same