

Dr. Donald Adongo, FH 6A-2

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Office Hours: TR 12:30 pm – 1:20 pm; or by appointment

Section 1 CRN 81174

Meeting: 12:30 pm – 1:20 pm MWF FH 302

<http://campus.murraystate.edu/faculty/dadongo>

DEPARTMENT: Mathematics and Statistics

COURSE PREFIX: MAT

COURSE NUMBER: 338

CREDIT HOURS: 3

I. TITLE:

Ordinary Differential Equations

II. COURSE DESCRIPTION AND PREREQUISITE(S):

Initial value problems, solutions and existence of solutions for first order differential equations, applications of first order differential equations, solutions and applications of second order differential equations, introduction to higher order differential equations, numerical studies of first and second order differential equations, and Laplace Transforms.
Prerequisite(s): MAT 308.

III. COURSE OBJECTIVES:

At the end of this course students should:

- A. Solve initial value problems;
- B. Find solutions and discuss the existence of solutions for first order differential equations;
- C. Solve applications of first order differential equations;
- D. Solve second order differential equations;
- E. Solve applications of second order differential equations;
- F. Solve certain higher order differential equations;
- G. Use the Laplace transform to solve differential equations;

IV. CONTENT OUTLINE:

- A. Initial value problems;
- B. Existence of solutions of first order differential equations;
- C. Solutions of second order differential equations;
- D. Higher order differential equations;
- E. Laplace transforms;

V. INSTRUCTIONAL ACTIVITIES:

Lecture, daily assignments, group work, projects, reading assignments, oral presentations, and quizzes on the material.

VI. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES:

None.

VII. TEXT(S) AND RESOURCES:

Elementary Differential Equations and Boundary Value Problems, by William Boyce and Richard DiPrima.

Other Resources: Matlab, Mathematica, Wolfram Alpha & SAGE Softwares.

VIII. EVALUATION AND GRADING PROCEDURES:

The course grade is based on Exams, Homework, Projects, and the Final Exam. The distribution is four exams (40%), homework assignments (20%), projects (20%) and final exam (20%)

Grading Scale:

90 - 100 %	A
80 - 89 %	B
70 - 79 %	C
60 - 69 %	D
Below 60%	E

Exams: The Exams will test your comprehension of concepts and skills not covered on a previous exam. Exams may contain both problem-solving questions and essay questions. Exams occur for everyone (to be fair to everyone) on the scheduled date. Sometimes, however, extenuating circumstances do exist. If you absolutely must miss an exam, you are to stop by or call me (or leave a message with the office if I am not in when you call) before the exam to tell me why you cannot be at the exam. In addition, you must complete the "missed exam form" (see the course website) within one day. If you do not, you will get a zero on that exam with no opportunity to make it up. An excused missed exam will be made up in my office within two days (an extension may be granted in rare cases), with the grade to be determined as explained at that time. Our four exams will be **September 8, October 6, November 1, and November 15.**

Final: The Final will be a comprehensive exam covering any material addressed that semester. The Final exam will be on **Wednesday, December 8th at 10:30 a.m.** in **FH 302.**

Homework: Homework will be assigned at the beginning of each section and will also be listed on the course web site. Homework must be completed in pencil, scanned and uploaded onto **Canvas** as a single document. **No Late Homework.**

Projects: You will have at least one week to complete a project.

Computer Software: Matlab and Mathematica are available in the Mathematics Lab FH104. Wolfram Alpha and SAGE are free online.

IX. ATTENDANCE POLICY:

Students are expected to adhere to the MSU Attendance Policy outlined in the current MSU Bulletins.

Class attendance will be taken daily. If you miss class you are responsible for obtaining the day's notes and assignments. While you are not graded on class attendance, you are expected to attend every class period or your grade will suffer (indirectly) if you do not attend. If you have two or less absences (or do not miss at all) this semester, I will drop your three lowest homework scores and lowest exam. Excused absences fall into two broad categories: 1. Absence due to personal illness or death in the immediate family or other extraordinary personal circumstance. Faculty may require appropriate authentication or documentation. 2. Absence due to student participation in a University Sanctioned Event in which the student serves as a representative of the institution.

Note the following provisions on arriving late to class or leaving early:

Every two tardies (arriving late) will count as an absence.

Leaving class early will count as an absence unless you provide me with a reason in advance.

X. ACADEMIC HONESTY POLICY:

Murray State University takes seriously its moral and educational obligation to maintain high standards of academic honesty and ethical behavior. Instructors are expected to evaluate students' academic achievements accurately, as well as ascertain that work submitted by students is authentic and the result of their own efforts, and consistent with established academic standards. Students are obligated to respect and abide by the basic standards of personal and professional integrity.

Violations of Academic Honesty include:

Cheating - Intentionally using or attempting to use unauthorized information such as books, notes, study aids, or other electronic, online, or digital devices in any academic exercise; as well as unauthorized communication of information by any means to or from others during any academic exercise.

Fabrication and Falsification - Intentional alteration or invention of any information or citation in an academic exercise. Falsification involves changing information whereas fabrication involves inventing or counterfeiting information.

Multiple Submission - The submission of substantial portions of the same academic work, including oral reports, for credit more than once without authorization from the instructor.

Plagiarism - Intentionally or knowingly representing the words, ideas, creative work, or data of someone else as one's own in any academic exercise, without due and proper acknowledgement.

Instructors should outline their expectations that may go beyond the scope of this policy at the beginning of each course and identify such expectations and restrictions in the course syllabus. When an instructor receives evidence, either directly or indirectly, of academic dishonesty, he or she should investigate the instance. The faculty member should then take appropriate disciplinary action.

Disciplinary action may include, but is not limited to the following:

- 1) Requiring the student(s) to repeat the exercise or do additional related exercise(s).
- 2) Lowering the grade or failing the student(s) on the particular exercise(s) involved.
- 3) Lowering the grade or failing the student(s) in the course.

If the disciplinary action results in the awarding of a grade of E in the course, the student(s) may not drop the course.

Faculty reserve the right to invalidate any exercise or other evaluative measures if substantial evidence exists that the integrity of the exercise has been compromised. Faculty also reserve the right to document in the course syllabi further academic honesty policy elements related to the individual disciplines.

A student may appeal the decision of the faculty member with the department chair in writing within five working days. Note: If, at any point in this process, the student alleges that actions have taken place that may be in violation of the Murray State University Non-Discrimination Statement, this process must be suspended and the matter be directed to the Office of Equal Opportunity. Any appeal will be forwarded to the appropriate university committee as determined by the Provost.

Note: Faculty reserve the right to invalidate any examination or other evaluative measures if substantial evidence exists that the integrity of the examination has been compromised.

In this Course, violations of Academic Honesty will result in a failing grade awarded on the particular exercise involved.

XI. NON-DISCRIMINATION POLICY STATEMENT:

Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, sex, gender identity, sexual orientation, religion, age, veteran status, or disability in employment or application for employment, admissions, or the provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities.

In particular and without limiting the preceding and pursuant to and consistent with the requirements of Title VI of the Civil Rights Act of 1964 and its regulations 34 CFR 100 et seq.; Section 504 of the Rehabilitation Act of 1973 and its regulations 34 CFR 104; Title IX of the Education Amendments of 1972, 20 USC 1681 et seq., and its regulations 34 CFR 106 et seq; and the Age Discrimination Act of 1975 and its regulations 34 CFR 110, Murray State University does not discriminate on the basis of race, color, national origin, sex, handicap, or age in its educational programs and activities. This non-discrimination in education programs and activities extends to employment and admissions and to recruitment, financial aid, academic programs, student services, athletics, and housing. Murray State is required by Title IX and 34 CFR part 106 not to discriminate on the basis of sex and the prohibition against sex discrimination specifically includes a prohibition of sexual harassment and sexual violence. Examples of prohibited sexual harassment and sexual violence can be found in the "Policy Prohibiting Sexual Harassment" which can be accessed via the link referenced in Appendix I.

Inquiries concerning the application of these provisions may be referred to: 1) the Executive Director of Institutional Diversity, Equity, and Access/ Murray State University Title IX Coordinator, Murray State University, 103 Wells Hall, Murray, KY 42071 Telephone: (270) 809-3155 Fax: (270) 809-6887; TDD: (270) 809-3361; Email: msu.titleix@murraystate.edu; or 2) to the Assistant Secretary of the United States Department of Education, U.S. Department of Education, Office for Civil Rights, 400 Maryland Avenue, SW, Washington, D.C. 20202-1100; Telephone: 1-800-421-3481 FAX: 202-453-6012; TDD: 1-800-877-8339; Email: OCR@ed.gov

For more information, contact the Title IX Coordinator and Executive Director of Institutional Diversity, Equity and Access, 103 Wells Hall, [\(270\) 809-3155](tel:2708093155) (voice), [\(270\) 809-3361](tel:2708093361) (TDD).

XII. Other required departmental or collegiate committee information

Electronic Communication Policy: It is the default policy of the Department of Mathematics and Statistics that, without the prior consent of the course instructor, no device may be used for electronic communication in class. This shall include cell

phones, smart-phones, computers, laptops, and tablets. In addition, this includes verbal calling, incoming calls, email, text messaging, the use of cell phone calculators on tests and quizzes, and the use of the wireless capabilities of calculators or other electronic devices. Unless given special permission in advance from the course instructor for potential cases of emergency or critical family situations, cell phones must be kept on silent and out of sight (i.e. secured to a person's belt or kept in a bag or purse away from desks). Should a student's cell phone be visible, ring, or should the student be engaged in some other form of unauthorized usage that the course instructor finds to be disruptive to the class, the student may be asked to leave class and not return for that class period, and be counted absent for that day. Similar restrictions and penalties apply to use of other electronic devices, unless permitted by the instructor for that class period.

OTHER MSU POLICIES:

Face Covering/Mask Policy

Guidance and requirements for face masks may be revised as conditions change in the state and region. All students are required to abide by the University's guidance and/or requirements for face coverings throughout the term of this course. Please visit the [Racer Restart](https://www.murraystate.edu/racerrestart/) (<https://www.murraystate.edu/racerrestart/>) page for the latest guidance on face coverings.

Counseling Resources on Campus

Murray State University has two centers on campus that offer free and confidential mental health services for students. The University Counseling Center is located in Suite C104 in Oakley Applied Science and will be offering both in-person and remote services this year. On-call counselors are available 9:00-3:00 Monday through Friday for walk-in sessions. To schedule an appointment, email them at msu.counselingcenter@murraystate.edu. For more information, call them at 270-809-6851 or visit their website at www.murraystate.edu/CounselingCenter. The Psychological Center is located in Wells Hall and **will be offering primarily in-person sessions**. You can reach them at 270-809-2504 or visit their website at www.murraystate.edu/PsychologicalCenter.

Free mental health self-help resources are available through TAO Connect. To access them, simply go to us.taoconnect.org/register and sign in using your Murray State email address.

In a crisis situation, or after hours, please contact Murray State Police at 270-809-2222 or call 911 if you are off campus. You can also call the 24-hour crisis hotline at 800-592-3980 or contact the Crisis Text Line at 741-741.

Students with Disabilities

Students requiring special assistance due to a disability should visit the Office of Student Disability Services immediately for assistance with accommodations. For more information, students with disabilities should contact the Office of Student Disability Services, 423 Wells Hall, Murray, KY 42071. Telephone: 270-809-2018 (Voice) 270-809- 5889 (TDD).

Email: msu.studentdisabilities@murraystate.edu. Our office will contact professors directly regarding any specific accommodation needs that may be applicable to their particular classroom setting.

Class Absence due to COVID-19

The University will observe the guidance provided by the CDC for the need to quarantine following exposure. Information will be made available on the Racer Restart webpage (<https://www.murraystate.edu/racerrestart/>). **Students diagnosed with COVID-19 will contact their instructors and msu.studentcovidpositive@murraystate.edu immediately. Students instructed to quarantine due to exposure should also contact their instructors, and msu.studentcovidquarantine@murraystate.edu immediately.** Instructors may make adjustments to due dates or other course requirements to accommodate the severity of the illness and/or the availability of resources needed to complete tasks. If possible, students will continue to check Canvas regularly, and maintain regular communication with their instructors.

Starfish Student Success Network

Your success is important! This course is part of the Murray State University student success initiative that utilizes the Starfish Student Success Network. Starfish may be used to communicate with you about your academic progress and get you help if you need it. Throughout the term, you may receive emails regarding your attendance, course grades or academic performance. To benefit, it is important that you check your Murray State email regularly and follow through on recommended actions. You may also be contacted directly by others on campus who care about your academic success and personal well-being. This may include your academic advisor and staff from Student Engagement and Success and other student support offices across campus. Starfish

provides you with the opportunity to “Raise Your Hand” if you need help. Take advantage of this and other features by logging into your Starfish account through myGate. More information can be found at murraystate.edu/starfish.

Racer Safe and Healthy Guidelines

Check the Racer Restart webpage (<https://www.murraystate.edu/racerrestart/>) for the updated Racer Safe and Healthy Guidelines.



Please fill out this portion, detach and return to the instructor by **Friday August 20, 2021**.

By my signature below, I certify that I have received a copy of the course syllabus for MAT 308-(01) taught by Dr. Donald Adongo during the Fall 2021 Semester. Furthermore, I certify that I have read and understand the contents of the course syllabus.

Printed Name:

Signature:

Date: