

Dr. Donald Adongo, FH 6A-2

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Office Hours (via Zoom): MWF 1:30 pm – 2:20 pm; and by appointment

Section 2 CRN 10533

Meeting: 12:30 pm – 1:20 pm MTWRF FH 300

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

COVID-19 Information: see section XIV

DEPARTMENT: MATHEMATICS AND STATISTICS

COURSE PREFIX: MAT

COURSE NUMBER: 308

CREDIT HOURS: 5

**I. TITLE:**

Calculus and Analytic Geometry II

**II. COURSE DESCRIPTION AND PREREQUISITE(S):**

A continuation of MAT 250, this course further develops techniques and applications of integration and is an introduction to sequences and series. Topics include integration strategies, computing areas and volumes, arc length, parametric curves, polar coordinates, sequences and series, tests for convergence of series, power series, and Taylor series.

**Prerequisite(s):** MAT 250.

**III. COURSE OBJECTIVES:**

The student will be able to:

- A. Be introduced to the concept of studying mathematics problems from different points of view: numerically, graphically, and symbolically;
- B. Be introduced to open-ended problems and will learn how to make conjectures based on partial solutions to such problems;
- C. Be able to use integration techniques and apply them to various disciplines, including science, industry and technology, and business;
- D. Be able to apply approximation techniques in the context of a broader concept;
- E. Learn how to approach a difficult problem by studying a sequence of related, simpler problems;
- F. Develop their critical thinking or problem solving skills; that is, the ability to analyze problems, determine what solution techniques are appropriate, determine what information is needed, what information is given, and what information is extraneous;
- G. Learn to interpret solutions to problems in the context of a real world setting.

**IV. CONTENT OUTLINE:**

- A. Finding Antiderivatives
  - i. Substitution techniques
  - ii. Use of a computer algebra system
  - iii. Left and right rectangular sums, error and first derivatives
  - iv. Trapezoid and midpoint sums, error and second derivatives
  - v. Simpson's rule
- B. Applications of the Definite Integral
  - i. Volume and arclength
  - ii. Work and other applications from physics
  - iii. Present value and other applications from economics
  - iv. Fourier polynomials
- C. Antidifferentiation Techniques
  - i. Integration by parts
  - ii. Miscellaneous techniques
- D. Improper Integrals
  - i. Convergence
  - ii. Applications to probability
  - iii. L'Hopital's rule, comparing growth rates
- E. Infinite Series
  - i. Sequences and limits
  - ii. Convergence and divergence of series

iii. Power series

F. Power series as functions

**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:**

*Essential Calculus Early Transcendentals* Second Edition by James Stewart.

The e-book and/or access code required for the course is provided through the University's Inclusive Access Textbook Program (You should have received an email from the University Store). Note that:

- A. These are course materials that are offered at the lowest market rate
- B. They will be accessed via Canvas
- C. Your student account will be charged for the cost of these materials, unless you opt out
- D. Opting out will cut off your access to the required materials for this course
- E. FAQ page: [solve.redshelf.com](http://solve.redshelf.com) and help desk [help@redshelf.com](mailto:help@redshelf.com)

**Calculator Limitations** Use of calculators such as the TI-89 and TI-92, which compute symbolic derivatives and integrals will not be allowed on the exams.

**VIII. EVALUATION AND GRADING PROCEDURES:**

A. Your course grade will be based on Exams, Homework (written), Online Assignments, and the Final Exam. Sixty percent of the course grade will come from 4 major exams (each exam counts 15 percent of the grade) and twenty percent of the course grade will come from the final exam. The homework (written) and online assignments will each contribute 10 percent of the course of the course grade. The grading scale is:

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 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 within two days (an extension may be granted in rare cases), with the grade to be determined as explained at that time. Our four semester exams will be **February 9, March 2, March 18, and April 15.**

**Final:** The Final will be a comprehensive exam covering any material addressed that semester. The Final exam will be on **Wednesday, May 5<sup>th</sup> at 1:00 p.m. in FH 300.**

**Homework:** Homework (written) will be assigned at the beginning of each section and will also be listed on the course web site. Homework will be collected once a week. (**No Late Homework**). Homework must be scanned and uploaded onto **Canvas** as a single document.

**Online Assignments:** These are located on **webassign** and may be accessed via your Canvas Course Link. You will have two (2) attempts on each set of problems. The assignments will be available at the beginning of each section covered and will automatically switch off on the due dates.

**Important Grade-dates:** The last day to drop a course without receiving a grade (or a W) is Monday, January 25. The last day to change a full semester class from AUDIT to CREDIT is Monday, January 25. The last day to drop individual courses and receive a grade of "W" (no penalty) is Monday, April 19. The last day to change a full semester class from CREDIT to AUDIT is Monday, April 19.

**Non-Instructional Study Days:** February 24, March 30.

**B. Auditing:** If you seek to change your status to audit, you must continue to do all the graded assignments, to attend classes regularly after the audit is given, to miss no more than 5 class periods after the audit is given, and to maintain at least a 40% average in the course. If these requirements are not followed, then an "E" will be earned for this course.

## **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 miss three or fewer days (or do not miss at all) this semester, I will drop your four lowest homework and online assignment scores.

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:**

### **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.

For more information 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](mailto:msu.titleix@murraystate.edu).

### **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](mailto:msu.studentdisabilities@murraystate.edu). Our office will contact professors directly regarding any specific accommodation needs that may be applicable to their particular classroom setting.**

## **XII. 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](http://murraystate.edu/starfish).)

## **XIII. 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. *In particular, I will count absent for that day any one texting during this class.*

#### **XIV. Covid-19 Related Information**

##### **Student Face Covering/Mask Policy**

- Students must wear face coverings/masks on campus, including but not limited to in-person classroom settings (classrooms are also required to be configured to achieve social distancing) and unless exempted with documentation by a medical professional.
- Student documentation should be registered with the Office of Student Disability Services, which may offer classroom accommodations regarding the face covering/mask student policy. The Office of Student Disability Services is located at 423 Wells Hall. Office staff can be reached by phone at 270- 809-2018 or by email at [kashlock@murraystate.edu](mailto:kashlock@murraystate.edu).
- Failure to comply with the face covering/mask policy may result in the student being subject to the Murray State Student Disciplinary Procedure. This policy can be found here: <https://www.murraystate.edu/headermenu/administration/StudentAffairs/policies.aspx>.
- Students are not required to wear face coverings/masks in their residence hall room, in dining facilities upon receiving food/beverage, or in community restrooms/bathrooms.

##### **Counseling Resources on Campus**

Murray State University has three centers on campus that offer free and confidential mental health services for students. The University Counseling Center is located in Oakley Applied Science and will be offering a combination of in-person and remote services this fall. You can call them at 270-809-6851, email them at [msu.counselingcenter@murraystate.edu](mailto:msu.counselingcenter@murraystate.edu), or visit their website at [www.murraystate.edu/CounselingCenter](http://www.murraystate.edu/CounselingCenter). The Psychological Center is located in Wells Hall and will be offering primarily in-person sessions this fall. You can reach them at 270-809-2504 or visit their website at [www.murraystate.edu/PsychologicalCenter](http://www.murraystate.edu/PsychologicalCenter). The Counseling and Assessment Center is located in Alexander Hall and will be offering both in-person and remote services this fall. You can reach them at 270-809-3822 or visit their website at [www.murraystate.edu/CAC](http://www.murraystate.edu/CAC).

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.

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##### **Class Absence due to COVID-19**

Students diagnosed with COVID-19 will contact their instructors and [msu.studentcovidpositive@murraystate.edu](mailto:msu.studentcovidpositive@murraystate.edu) immediately. Instructors will 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. COVID-19 positive students will be required to isolate for 10 days (or as directed by the individual's medical provider). Students may return to class at the end of the 10-day isolation period if they are symptom-free.

Students that have had close contact with or have had potential exposure to a COVID-19 positive person will contact their instructors and [msu.studentcovidquarantine@murraystate.edu](mailto:msu.studentcovidquarantine@murraystate.edu) immediately to mark the start of the quarantine period. Students experiencing no symptoms and after Day 5, have a negative PCR test result and are still symptom-free are required to quarantine a total of 7 days. Students 1) experiencing no symptoms and do not get tested, or 2) have had symptoms, must quarantine for 10 days. Students may return to class at the end of the quarantine period, provided they are symptom-free.

For additional information about MSU Quarantine and Isolation Procedures, please refer to this site: <https://www.murraystate.edu/racerrestart/procedures.aspx>.

**Racer Safe and Healthy Guidelines**

1. Regularly wash hands for at least 20 seconds and use hand sanitizer frequently
2. Check your temperature daily
3. If you feel sick, stay home
4. Wear a face mask
5. Utilize MSU Health Services (call, visit, or tele-visit)
6. Practice social distancing
7. Keep your workstation/room sanitized
8. Get a flu shot
9. Exhibit healthy behavior
10. Download the Apple COVID-19 app (or similar app) for daily use
11. Eat Well. Exercise. Get Plenty of Rest.
12. Make good choices



Please fill out this portion, scan and upload onto Canvas by **Friday January 22, 2021**.

By my signature below, I certify that I have received a copy of the course syllabus for MAT 308-(02) taught by Dr. Donald Adongo during the Spring Semester of 2021. Furthermore, I certify that I have read and understand the contents of the course syllabus.

**Printed Name:** .....

**Signature:** .....

**Date:** .....