

# Math 114-DL2 Analytic Geom and Calc II

## Fall 2021

- **Instructor:** Tyrus Berry, tberry@gmu.edu, <http://math.gmu.edu/~berry/>
- **Office:** Blackboard Collaborate Ultra
- **Synchronous Online Meeting:** Wednesdays 8:30am-10:20am on Blackboard Collaborate Ultra
- **Office hours:** TBD
- **Course Website:** Blackboard, <https://mymasonportal.gmu.edu/>
- **Book:** Thomas' Calculus: Early Transcendentals by Hass, Heil and Weir, 14th Edition
- **Topics:** The course will cover portions of Chapters 6-11 of the text.
- **Exams:** Exams will be online and will require LockDown Browser + Webcam, see below for details
- **Recitation: In Person** at Peterson Hall 1105 with Patricia Madison Sherwood.

### General Comments

In this course we go beyond the basic tools of calculus (limits, derivatives, and integrals) to develop the ideas and methods that are the foundation of science and engineering. These include notions of volume, area, and arclength; differential equations and related rates; advanced methods of finding and approximating solutions; as well as sequences and series.

### Grading

Grades will be based on:

- Module Quizzes: 15%
- Recitation Participation: 10%
- Midterms:
  - Midterm 1: Sept. 22nd, 20%
  - Midterm 2: Oct. 27th, 25%
- Final Exam: Dec. 1st, 30%

### LockDown Browser + Webcam Requirement

This course requires the use of LockDown Browser and a webcam for online exams. The webcam can be the type that's built into your computer or one that plugs in with a USB cable.

Watch this brief video to get a basic understanding of LockDown Browser and the webcam feature.

<https://www.respondus.com/products/lockdown-browser/student-movie.shtml>

**Download and install LockDown Browser from this link:**

<https://download.respondus.com/lockdown/download.php?id=133435885>

**Once Installed:**

1. Start LockDown Browser
2. Log into Blackboard Learn
3. Navigate to the exam

When taking an online exam, follow these guidelines:

- Ensure you're in a location where you won't be interrupted
- Turn off all other devices (e.g. tablets, phones, second computers) and place them outside of your reach
- Before starting the test, know how much time is available for it, and also that you've allotted sufficient time to complete it
- Clear your desk or workspace of all external materials not permitted - books, papers, other devices
- Remain at your computer for the duration of the test
- If the computer, Wi-Fi, or location is different than what was used previously with the "Webcam Check" and "System & Network Check" in LockDown Browser, run the checks again prior to the exam
- To produce a good webcam video, do the following:
- Avoid wearing baseball caps or hats with brims
- Ensure your computer or device is on a firm surface (a desk or table). Do NOT have the computer on your lap, a bed, or other surface where the device (or you) are likely to move
- If using a built-in webcam, avoid readjusting the tilt of the screen after the webcam setup is complete
- Take the exam in a well-lit room, but avoid backlighting (such as sitting with your back to a window)
- Remember that LockDown Browser will prevent you from accessing other websites or applications; you will be unable to exit the test until all questions are completed and submitted

Several resources are available if you encounter problems with LockDown Browser:

- The Windows and Mac versions of LockDown Browser have a "Help Center" button located on the toolbar. Use the "System & Network Check" to troubleshoot issues. If an exam requires you to use a webcam, also run the "Webcam Check" from this area
- Respondus has a Knowledge Base available from [support.respondus.com](http://support.respondus.com). Select the "Knowledge Base" link and then select "Respondus LockDown Browser" as the product. If your problem is with a webcam, select "Respondus Monitor" as your product
- If you're still unable to resolve a technical issue with LockDown Browser, go to [support.respondus.com](http://support.respondus.com) and select "Submit a Ticket". Provide detailed information about your problem and what steps you took to resolve it

### **Schedule of Topics**

- Week 1: Review Calc. 1; Volumes by slicing and disks, shells when rotating (text Sections 6.1, 6.2)
- Week 2: Other integrals - arclength, surface area; briefly - work, force, probability; log as integral (Sections 6.3-6.6,7.1)

- Week 3: Differential equations and exponential; Euler's formula; hyperbolic functions. (Sections 7.1, 7.2, 7.3)
- Week 4: Relative rates of growth (7.4); Integration by parts; quadratic approximation; (Sections 8.1, 8.2)
- Week 5: Taylor polynomials. (Section 10.9); Review. **Midterm Exam 1**
- Week 6: Trigonometric Integrals; Trig Substitution; Partial Fractions (Sections 8.3, 8.4, 8.5)
- Week 7: Tables of integrals; Numerical Integration; Improper Integrals (Sections 8.6, 8.7, 8.8)
- Week 8: Introduction to First-Order Differential Equations; (Sections 9.1-9.3)
- Week 9: Sequences (Section 10.1 and supplement), Series idea; Integral Test (Sections 10.2, 10.3)
- Week 10: Comparison (Section 10.4); Review. **Midterm Exam 2**
- Week 11: Ratio Test; Alternating Series and Conditional Convergence. (Section 10.5, 10.6)
- Week 12: Power Series. (Section 10.7), Parametric Curves (Section 11.1)
- Week 13: Polar Coordinates (Sections 11.2, 11.3); Review.
- Week 14: Review and **Final Exam**.

### **Academic Policies**

Mason is an Honor Code university; please see the Office for Academic Integrity for a full description of the code and the honor committee process. With collaborative work, names of all the participants should appear on the work. Collaborative projects may be divided up so that individual group members complete portions of the whole, provided that group members take sufficient steps to ensure that the pieces conceptually fit together in the end product. Other projects are designed to be undertaken independently. In the latter case, you may discuss your ideas with others and conference with peers on drafts of the work; however, it is not appropriate to give your paper to someone else to revise. You are responsible for making certain that there is no question that the work you hand in is your own. If only your name appears on an assignment, your professor has the right to expect that you have done the work yourself, fully and independently.

### **Disability Accommodations**

Disability Services at George Mason University is committed to upholding the letter and spirit of the laws that ensure equal treatment of people with disabilities. Under the administration of University Life, Disability Services implements and coordinates reasonable accommodations and disability-related services that afford equal access to university programs and activities. Students can begin the registration process with Disability Services at any time during their enrollment at George Mason University. If you are seeking accommodations, please visit <http://ds.gmu.edu/> for detailed information about the Disability Services registration process. Disability Services is located in Student Union Building I (SUB I), Suite 2500. Email: [ods@gmu.edu](mailto:ods@gmu.edu)  
Phone: (703) 993-2474

### **Non-Discrimination Policy**

George Mason University is committed to providing equal opportunity and an educational and work environment free from any discrimination on the basis of race, color, religion, national origin, sex, disability, veteran status, sexual orientation, gender identity, gender expression, age, marital status, pregnancy status or genetic information. George Mason University shall adhere to all applicable state and federal equal opportunity/affirmative action statutes and regulations.

The University is dedicated to ensuring access, fairness and equity for minorities, women, individuals with disabilities, and veterans (as covered by law) in its educational programs, related activities and employment. George Mason University shall thus maintain a continuing affirmative action program to identify and eliminate discriminatory practices in every phase of university operations.

Any employee who becomes aware of sexual harassment or other potentially discriminatory behavior must contact Compliance, Diversity, and Ethics.

Retaliation against an individual who has raised claims of illegal discrimination or has cooperated with an investigation of such claims is prohibited.