

Math 119 Calculus II Syllabus
Agnes Scott College, Fall 2021, MWF 12:15-1:20 in Buttrick 204
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Office hours: Mon 2:00-2:30, Tues 2:00-3:00, and by appointment.

Required material: The textbook is Hughes-Hallett et al., *Calculus*, 4th ed.

Plan: We'll cover most of chapters 6-11. Topics include techniques and applications of integration, sequences and series, Taylor series, and differential equations. There's a more detailed schedule below, but it's subject to change.

Homework: By now you've probably figured out that working problems is mostly how you learn math. There will be homework assigned nearly every week, due at the beginning of class on Wednesdays. I strongly encourage you to work in groups, but you must make sure that you understand the problem completely yourself before submitting your answer. You will turn in some of each assignment on Webwork, which you can access through Canvas. You can submit answers as many times as necessary on Webwork (up to the due date), so I expect that you'll get 100% on each assignment. Some of the assignments you do not need to turn in, but you are responsible for the material - completing only the Webwork assignments is not enough to prepare you for the exams. This is a 4-credit course. In addition to in-class time, you will be spending time outside of class on various activities. The first and most important activity is to regularly read the text and to work through and understand the examples in each section. You should try to spend time on this every day.

Proficiency test: All Calculus II students are required to pass an "integration proficiency test" online. This test will have 7 integration problems, and **you must get each problem correct in order to pass**. You should be able to answer all the questions after we have finished Chapter 7. You may retake the proficiency test (with different problems) as many times as necessary. These must be completed by hand without help from any technology, websites, or other people.

Honor code and group work: All students are expected to follow the honor code throughout the semester; all exams and assignments should be pledged.

I strongly encourage you to work on the homework in groups. I suggest that you work on the problems by yourself first, making a note of anything giving you trouble; then meet with your group and work through the remaining problems together; and finally submit the solutions by yourself. Every group member must submit her own solutions independently; just copying the group's answers is plagiarism and is unacceptable.

Getting help: Chances are that sooner or later you'll get stuck on something, so don't get frustrated. Think hard, and if you're still stuck, do something else for a while. (It's amazing how often that works.)

My office hours are above - these are times when I'm guaranteed to be in my office waiting to talk to someone. If you want to see me at other times, please let me know and we'll find a time. Student learning assistants in the Math Learning Center will be able to provide help throughout the week. More details, including the schedule, will be posted on Canvas. You are encouraged to use this service, and should think of it as part of your weekly mathematics regimen. Finally, I can't emphasize enough that your classmates are your best source of help.

Learning Assistant workshops: Details TBA.

Course goals:
Learn to

Examine mathematical concepts graphically, numerically, and algebraically
Define, describe, and apply the concepts of calculus (in particular, integrals, series, and differential equations)
Develop skills in problem analysis and problem solving
Interpret real-world problems in the language of mathematics
Communicate mathematics effectively, both orally and in writing

Exams: We will have three midterm exams and one final exam, all closed-book. The first midterm covers all material up to that point, the second covers all material since the first, the third covers all material since the second, and the final is cumulative.

Assessment: Each midterm 15%, integration proficiency test 5%, homework 25%, final exam 25%.

Late work: Late work won't be accepted, and you won't be allowed to make up missed exams, except under very exceptional circumstances (e.g., the sasquatch attacks - and even then you should get a note from the sasquatch). In the case of a conflict that you absolutely can't resolve (for example, a religious holiday), you may arrange to take a midterm exam early.

Attendance and participation: I expect you to be at every class meeting on time, unless you've talked to me about having to be absent for technological or other reasons. However, tardiness or absence will have no (direct) effect on your grade, unless of course you miss a midterm.

Dates and deadlines:

First midterm exam: Friday, 9/17

Integration proficiency test: Friday, 10/8

Second midterm exam: Monday, 10/25

Third midterm exam: Monday, 11/22

Final exam: self-scheduled.

Course evaluation: Your feedback on the course is extremely valuable to me, the math department, and the administration. In particular, I take your comments very seriously and use them to improve the course the next time I teach it. You are responsible for completing an evaluation of the course at the end of the semester.

Title IX: Agnes Scott is here to help you if you have experienced any form of sexual harassment or violence, dating or domestic violence, or stalking. Please talk to any faculty or staff member with whom you feel comfortable. Faculty and staff members want to support you and have been trained to help. They will also inform the Title IX office so that you learn about options available to you. If you do not want college administrators to know what you have experienced, you may talk to the chaplain, as well as nurses or counselors in the Wellness Center with complete confidentiality. They will not tell anyone what you share with them unless you give your express permission. You may contact the Title IX Coordinator directly at T9Coordinator@agnesscott.edu.

Inclusion: This course adheres to the principles of diversity and inclusion integral to the Agnes Scott community. We respect people from all backgrounds and affirm people's decisions about gender expression and identity. Please let me know your preferred name or gender pronoun if different from the class roster.

ADA: Agnes Scott College seeks to provide equal access to its programs, services and activities for people with various abilities. If you will need accommodations in this class, please contact the Office of Academic Advising and Accessible Education (404-471-6150) to complete

the registration process. Once registered, please contact me so we can discuss the specific accommodations needed for this course.

Date	Topic
Mon 8/23	5 Definite integrals (review), 6.1 Graphical and numerical antiderivatives
Wed 8/25	More 6.1, 6.2 Analytical antiderivatives
Fri 8/27	More 6.2, 6.3 Differential equations
Mon 8/30	6.4 Fundamental Theorem of Calculus
Wed 9/1	6.5 Equations of motion
Fri 9/3	7.1 u -substitution
Mon 9/6	Labor Day - no classes
Wed 9/8	7.2 Integration by parts
Fri 9/10	7.5, 7.6 Approximating definite integrals
Mon 9/13	7.7 Improper integrals
Wed 9/15	Catch up, review
Fri 9/17	First exam
Mon 9/20	8.1 Area and volume
Wed 9/22	8.2 Geometric applications
Fri 9/24	8.3 Integrals in polar coordinates
Mon 9/27	8.4 Density
Wed 9/29	8.5 Applications - physics
Fri 10/1	8.6 Applications - economics
Mon 10/4	8.7, 8.8 Distribution functions, probability
Wed 10/6	9.1 Sequences
Fri 10/8	9.2 Geometric series Integration Proficiency Test due
10/11-10/15	Fall break
Mon 10/18	9.3, 9.4 Convergence, ratio test
Wed 10/20	9.5 Power series

Date	Topic
Fri 10/22	Catch up, review
Mon 10/25	Second exam
Wed 10/27	10.1 Taylor polynomials
Fri 10/29	10.2 Taylor series
Mon 11/1	10.3 Finding and using Taylor series
Wed 11/3	More 10.3, 10.4 Error estimates
Fri 11/5	More 10.4
Mon 11/8	11.1 Differential equations, 11.2 Slope fields
Wed 11/10	More 11.2, 11.3 Euler's method
Fri 11/12	11.4 Separation of variables
Mon 11/15	11.5 Growth and decay
Wed 11/17	11.6 Applications
Fri 11/19	Catch up, review
Mon 11/22	Third exam
11/24-11/26	Thanksgiving break
Mon 11/29	11.7 Population models
Wed 12/1	Appendix B Complex numbers
Fri 12/3	11.10, 11.11 Second-order differential equations
Mon 12/6	Summary/review