Math 3333: Calculus 3
Course Syllabus

This syllabus is current and accurate as of its posting date, but it will not be updated. For the most complete and up-to-date course information, contact the instructor.

Contact Information

Instructor: Dr. Simon Pfeil
Office: MCS 219C
Office Hours:
  Monday: 9am-10am, 12pm-1pm;
  Tuesday: 9am-9:30am, 11am-12:30pm;
  Wednesday: 9am-10am, 11am-1pm;
  Thursday: 9am-9:30am, 11am-12:30pm;
  Friday: 9am-10am;
  and by appointment.

E-mail: simon.pfeil@angelo.edu
Phone: 325-486-5436

Course Information

Course Description: Multivariate calculus and applications, partial differentiation, multiple integrals, infinite series, and approximation techniques.


Course Content: The following chapters including the particular sections listed are covered.

- Ch. 8 - Sequences and Series: Sequences and series, integral test and p-series, comparison tests, alternating series, ratio and root tests, power series, Taylor and Maclaurin series, approximations using power series.
- Ch. 10 - Vectors and the Geometry of Space: Space coordinates, vectors in the plane and space, dot product, cross product, equations of lines and planes, quadric surfaces.
- Ch. 11 - Partial Derivatives: Properties of functions of several variables, limits and continuity, partial derivatives, tangent planes, chain rule, directional derivatives, gradients, extrema.
- Ch. 12 - Multiple Integrals: Double integrals over rectangular and non-rectangular regions, double integrals using polar coordinates, triple integrals, change of variables.

Course Evaluation

Your grade for this course will be determined by your performance on tests, homework, quizzes, and a final exam. Final grades will be based on a standard 10-point grading scale.
Exams (79%): There will be 3 in-class tests during the semester and a comprehensive final exam. Each test will count 18% of your final grade, and the final exam will count 25%. If it helps your final average, and you take each test, then your final exam grade will replace your lowest test grade. If you miss up to one test for any reason, then that test grade will be replaced with the final exam grade. Any other missed tests will result in a grade of zero.

Homework (16%): Homework will be assigned almost every day, and will count 16% of your final grade. See above for how to sign in. All late homework - no matter the reason - will incur a 30% penalty. Your lowest two homework grades will be dropped.

Quizzes (5%): Quizzes will be short in-class assignments given throughout the semester, and will count 4% of your final grade. The lowest quiz grade will be dropped.

Other Information

Student Absence for Observance of Religious Holy Days:
A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for Observance of Religious Holy Day for more information.

Incomplete Grade Policy:
It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 Grading Procedures for more information.

Student Disability Services:
ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA), and subsequent legislation.
The Office of Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student’s responsibility to initiate such a request by contacting:

Ms. Dallas A. Swafford
Director of Student Disability Services
325-942-2047
Dallas.Swafford@angelo.edu
Houston Harte University Center

Title IX:
Angelo State University is committed to the safety and security of all students. If you or someone you know experience sexual harassment, sexual assault, domestic or dating violence, stalking, or discrimination, you may contact ASU’s Title IX Coordinator:

Michelle Nicole Boone, J.D.
Director of Title IX Compliance
325-486-6357
Michelle.Boone@angelo.edu
Mayer Administration Building

Academic Integrity
Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU.
The College of Science and Engineering adheres to the Statement of Academic Integrity

Copyright Policy
Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.

Plagiarism
Plagiarism is a serious topic covered in ASU’s Academic Integrity policy in the Student Handbook. Plagiarism is the action or practice of taking someone else’s work, idea, etc., and passing it off as one’s own. Plagiarism is literary theft.

In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list. Papers are subject to be evaluated for originality via Turnitin. Resources to help you understand this policy better are available at the ASU Writing Center.

General Policies Related to This Course
All students are required to follow the policies and procedures presented in these documents:

Angelo State University Student Handbook

Angelo State University Catalog
Student Learning Outcomes

Students will demonstrate factual knowledge including the mathematical notation and terminology used in this course. Students will demonstrate the ability to read, interpret, and use the vocabulary and symbolism of vectors, infinite series, and multivariate calculus.

Students will be able to describe the fundamental principles arising from the concepts covered in this course. Students will demonstrate familiarity with the concepts that follow from the definitions; for example, convergence and divergence of infinite series, tangent planes and normal lines to surfaces, and integral representations of areas and volumes.

Students will be able to apply course material to solve problems. Students will use the facts, formulas, and techniques learned in this course to solve problems pertaining to the core concepts of the course, as well as to other areas of mathematics and various applies areas such as physics, chemistry, and engineering.

Students will develop specific skills, competencies, and reasoning abilities to support further study or work in this field or related fields. Students will acquire a level of proficiency in the fundamental concepts and applications necessary for further study in academic areas requiring calculus III as a prerequisite, or for work in occupational fields such as physics, chemistry, statistics, and engineering, as well as mathematics.

Course Schedule

Weekly Schedule
Below is a tentative schedule, but it is likely to change throughout the semester.

Week 1: Sequences and series
Week 2: Convergence testing
Week 3: Power series and Applications
Week 4: Taylor and Maclaurin Series
Week 5: Test 1
Week 6: 3D Coordinate systems, vectors, dot product
Week 7: Cross product, equations of lines and planes
Week 8: Cylinders and quadric surfaces
Week 9: Functions of several variables, limits, continuity, and partial derivatives
Week 10: Test 2
Week 11: Tangent planes, the chain rule, and directional derivatives
Week 12: The gradient vector, maximum and minimum values
Week 13: Double integrals over regular and general regions
Week 14: Test 3
Week 15: Triple integrals, change in variables in multiple integrals
Week 16: Final Exam (Thursday, May 9: 8:00am-10:00am)
How to Get Help

Angelo State University offers many free ways to get help in your classes, especially in math.

1. **Math Lab:** A tutoring lab staffed by undergraduate tutors. This lab has computers and empty tables where you can study or work on homework, and ask questions as needed. You can also just stop by to ask specific questions. No appointment is needed.
   a. Location: 3rd floor of the library, Room C302
   b. Hours: Monday-Thursday 9am-8pm; Friday 9am-Noon; Sunday 4pm-8pm
   c. Contact: [https://www.angelo.edu/dept/freshman-college/math-lab.php](https://www.angelo.edu/dept/freshman-college/math-lab.php) or 325-486-6369

2. **Upswing:** An online tutoring service paid for by ASU. Schedule a session, or connect instantly with one-on-one tutors using a virtual whiteboard, audio, and (optionally) video.
   a. Location: [https://angelo.upswing.io/](https://angelo.upswing.io/) and click “New User”
   b. Hours: 24/7 or by appointment

3. **Office Hours:** I have ten hours every week that are set aside to work with students. These hours are on the first page of this syllabus, and no appointment is necessary during these times. I am also available at other times by appointment. Speak with me after class or email me at simon.pfeil@angelo.edu to set up a time.

4. **Email:** Almost every day, I am available via email at simon.pfeil@angelo.edu. Feel free to email me anytime with questions: I’ll respond as soon as possible.

5. **Private Tutors:** Though not free, the mathematics department also maintains a list of students that are interested in private tutoring. Stop by the math department office for more information.