Calculus 2
Fall 2018

Course no. 2314.020
Instructor Trey Smith
Time MWF 11:00
Location MCS 210
Office MCS 219A
Office Hours MWF 9:00-10:00, 2:00-3:00: TR 11:00-12:00, 2:00-3:00
Others by Appointment
Phone (325) 486-5441
Email trey.smith@angelo.edu
Fax (325) 942.2503

Grading
Your grade will be determined using your homework/quiz grade, three
tests and a comprehensive final exam. The homework/quiz grade will
count as bonus points (see homework below), and each test will count as
1/3 of your final grade. The final exam will serve to determine your final
grade in the following way; if your final exam is a 90 or better, you will
gain a letter grade, if the final exam is 60 or less, you will drop a letter
grade.

Homework
You will be assigned homework every class period. The next class, the
homework will either be collected, or you will be given a quiz based on
the homework material. At the end of each test period, the average of your
homework/quiz grade will be scaled and used as bonus points for that
particular test. You will generally receive a total of 5 to 10 points. This
total will be determined by the instructor on a test-by-test basis.

Attendance
Regular class attendance is expected. There will be no make-up for missed
homework or quiz, so a missed day may result in a zero.

Calculators
Calculators will generally not be allowed during exams.

Course Outline
The following is a tentative outline of the material to be covered. I reserve
the right to change the material and/or sequence.

<table>
<thead>
<tr>
<th>Week</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Review of 2313, Approximating Areas under Curves</td>
</tr>
<tr>
<td>2</td>
<td>Definite Integrals, The Fundamental Theorem of Calculus</td>
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<tr>
<td>3</td>
<td>Substitution, Regions between Curves, Velocity and Net Change</td>
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<tr>
<td>4</td>
<td>Revolutions and Volume</td>
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<tr>
<td>5</td>
<td>Revolutions (cont), Review, Test 1 (9.28)</td>
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<tr>
<td>6</td>
<td>Arc Length, Logarithmic and Exponential Functions</td>
</tr>
<tr>
<td>7</td>
<td>Integration Techniques, Trigonometric Integrals</td>
</tr>
</tbody>
</table>
8 Integration Techniques

9 Integration Techniques, Review, Test 2 (10.26)

10 Integration Techniques

11 Numerical Integration, Improper Integrals

12 Parametric Equations, Polar Coordinates

13 Calculus in Polar Coordinates

14 Conic Sections, Review, Test 3 (11.30)

15 Review

16 Final Exam (12.12, 10:30-11:30)

General University Policies

- **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:

  Dallas Swafford  
  Director of Student Disability Services  
  Office of Student Affairs  
  325-942-2047  
  dallas.swafford@angelo.edu

- **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 Boone  
  Director of Title IX Compliance  
  325-486-6357  
  michelle.boone@angelo.edu

- **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. ([http://www.angelo.edu/opmanual/](http://www.angelo.edu/opmanual/) -- OP 10.19)

- **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](http://www.angelo.edu/opmanual/) for more 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. ([http://www.angelo.edu/opmanual/](http://www.angelo.edu/opmanual/) -- OP 10.19)

- **Student Conduct Policies**

  **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](http://www.angelo.edu/opmanual/).

  **Plagiarism**

  Plagiarism is a serious topic covered in ASU’s [Academic Integrity policy](http://www.angelo.edu/opmanual/) 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](http://www.angelo.edu/opmanual/).

  **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.

- **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**

1. **The students will demonstrate factual knowledge including the mathematical notation and terminology used in this course.** Students will read, interpret, and use the vocabulary, symbolism, and basic definitions used in Calculus II as they pertain to integrals, parametric equations, and polar coordinates.

2. **The students will describe the fundamental principles including the laws and theorems arising from the concepts covered in this course.** Students will identify and apply the laws and formulas that result directly from the definitions; for example, integral formulas and integration techniques, and applying calculus operations to parametric and polar equations.

3. **The students will apply course material along with techniques and procedures covered in this course to solve problems.** Students will use the facts, formulas, and techniques learned in this course to calculate areas, volumes, and surface areas; to find lengths of curves; to analyze problems in physics.

4. **The students will develop specific skills, competencies, and thought processes sufficient 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 II as a prerequisite, or for work in occupational fields requiring a background in Calculus II. These fields might include computer science, engineering, the physical and natural sciences as well as mathematics.

**Textbook:** *Essential Calculus: Early Transcendentals, 2nd ed.* by James Stewart. The following chapters are covered. (See textbook "Contents")

5. **Integrals.** Areas, the definition of the definite integral, the Fundamental Theorem of Calculus, properties of the definite integral, indefinite integrals, substitution.

6. **Techniques of Integration.** Integration by parts, trigonometric integrals, trigonometric substitution, completing the square, integration by partial fractions, improper integrals.
7. **Applications of Integration.** Areas, volumes, arc length, applications to physics and engineering.

9. **Parametric Equations; Polar Equations.** Parametric equations: definition, tangents and areas, arc length and surface area; polar equations: definition, areas, and length, conic sections.