Math 172 Course Syllabus

Instructor: David J. Manuel
Office Hours: M 11am-12noon; 1:30-3pm, T 1:30-3pm or by appointment
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Course Name: Calculus
Course Description: Techniques of integration, applications of integrals, improper integrals, sequences, infinite series. Designed to be more demanding than MATH 152.
Required Text: Stewart, Calculus: Early Vectors, Preliminary Edition
Meeting Times/Locations: The lecture and lab meeting times are posted at www.math.tamu.edu/courses/math172/
Prerequisites: MATH 147, 151, or 171 or equivalent with a grade of C or better.
Calculator Policy: Only scientific (i.e., non-graphing) calculators will be allowed on exams or quizzes.

Course Objectives: This course is focused on quantitative literacy in mathematics as applied to math and science. Upon successful completion of this course, students will be able to:
1. Understand and explain the relationship between Riemann Sums and definite integrals.
2. Use the concepts of definite integrals to solve problems involving area, volume, work, and other physical applications.
3. Use substitution, integration by parts, trigonometric substitution, and partial fractions to evaluate definite and indefinite integrals.
4. Apply the concepts of limits, convergence, and divergence to evaluate different types of improper integrals.
5. Use first-order differential equations to model real-world situations, and be able to solve these equations using appropriate techniques.
6. Determine convergence or divergence of sequences and series.
7. Use Taylor and MacLaurin series to represent functions.
8. Use Taylor or MacLaurin series to integrate functions not integrable by conventional methods.

Grading Policy:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 exams</td>
<td>500</td>
<td>A = 900-1000</td>
</tr>
<tr>
<td>Homework</td>
<td>80</td>
<td>B = 800-899</td>
</tr>
<tr>
<td>Quizzes</td>
<td>80</td>
<td>C = 700-799</td>
</tr>
<tr>
<td>Class Participation Points</td>
<td>90</td>
<td>D = 600-699</td>
</tr>
<tr>
<td>Final Exam</td>
<td>250</td>
<td></td>
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<tr>
<td>Total</td>
<td>1000</td>
<td></td>
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Attendance: Attendance of both lectures and labs is important; further, attendance of lectures is required to earn Class Participation Points. If you must miss class on days assignments are due, please contact me as soon as you know (preferably in advance and definitely with a University-authorized reason). I suggest you find a study partner or two to get notes on days you have to miss. Please refer to Rule 7 of the Student Rules for more details regarding excused absences (http://student-rules.tamu.edu/rule07)

Make-up Policy: If you miss a quiz or an exam you must notify me in advance (preferably) or no later than the end of the second business day after the exam (said notification should then include why you were unable to notify me in advance). Exams must be made up within 30 days of the date of the exam and require appropriate documentation of a University-excused absence. Make-up policies for other assignments are discussed on the following pages.
Scholastic Dishonesty: Remember the Aggie Code of Honor: *An Aggie does not lie, cheat, or steal or tolerate those who do.* There will be many opportunities (homework) for you to work together in an appropriate manner. However, each student is responsible for turning in their own unique work. During exams and quizzes, you are not allowed to receive any kind of assistance from anyone. Any instance of scholastic dishonesty will be handled according to the processes outlined on the Honor Code website at [http://aggiehonor.tamu.edu/Faculty/WhatToDo.aspx](http://aggiehonor.tamu.edu/Faculty/WhatToDo.aspx).

Expectations: I expect you to have read the material and stepped through the examples in the posted notes before class, and I expect you to treat me with respect. You can expect me to be prompt and fair (consistent) in grading and to treat you with respect.

Weekly Schedule (tentative): The following is a tentative schedule.

**Week 1:** 6.1-6.3, 6.4-6.5, 6.6  
**Week 2:** 7.1, 7.2  
**Week 3:** 7.3, 7.4, 7.5  
**Week 4:** 7.5, 8.1, Review  
**Week 5:** Exam I (6.1-7.5), 8.2, 8.3  
**Week 6:** 8.4, 8.9, 8.8  
**Week 7:** 9.1, 9.2, 9.3  
**Week 8:** 9.6, Review, Exam II (8.1-9.3)  
**Week 9:** 10.1, 10.2  
**Week 10:** 10.2, 10.3  
**Week 11:** 10.4  
**Week 12:** 10.5, 10.6, 10.7  
**Week 13:** 10.7, 10.9, Review  
**Week 14:** Exam III (9.6, 10.1-10.9), Review for Final  
**Week 15:** Class does not meet (Final Exam Thursday)

Exams: Dates for the exams are Tuesday, 17 February, Thursday, 12 March, and Tuesday, 28 April in BLOC 161 (the TR classroom).

Final Exam: A comprehensive final exam will be given Thursday, 7 May in BLOC 161. For the specific time, as well as a full schedule of all final exams, see [http://registrar.tamu.edu/general/finalschedule.aspx#_Spring_2015](http://registrar.tamu.edu/general/finalschedule.aspx#_Spring_2015) (note the underscore _ after #)

Homework/Practice Problems: Supplemental homework assignments will be assigned most Wednesdays* during the semester and due one week later. There will be 10 assignments; I will drop the lowest two grades and divide the sum of the remaining grades by 10 (80 points total). I will also assign additional textbook problems for your practice only. For a list of these practice problems, see the notes, e-Campus, or [www.math.tamu.edu/~dmanuel/math172/assign.html](http://www.math.tamu.edu/~dmanuel/math172/assign.html).

Recitation Quizzes: Most Wednesdays*, you will have a quiz over the material covered on the homework due that day. There will be 9 quizzes; I will drop the lowest grade and divide the sum of the remaining grades by 10 (80 points total). Students who miss a quiz due to a university-excused absence must make up the quiz before the next exam. **NOTE:** students absent through illness should follow the procedures outlines at [http://attendance.tamu.edu](http://attendance.tamu.edu). Doctor-verified illness will be counted as excused; any other illness will count as your dropped lowest grade (first absence only) before make-ups are authorized.

Class Participation Points: Every lecture day* beginning Tuesday, 27 Jan, you will be required to participate in discussion and answer questions related to the material in the notes (posted on e-Campus). I will ask questions to students in a (predetermined) random order; you will receive points based on the preparedness and the accuracy of your answer. Near the end of the semester, I will convert these points (method to be determined) into a grade out of 90 points. Obviously, to do well, you must download the notes, work through them beforehand, and attend class every day. These will NOT be “gimme” points!

*-see e-Campus Calendar for details
Copyright Statement: Please note that all written and web materials for this course are protected by copyright laws. You can Xerox (or download) one copy for your own use, but multiple copies are forbidden unless written permission is obtained by your instructor.

ADA Statement: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, in Cain Hall, Room B118, or call 845-1637. For more information, visit http://disability.tamu.edu

Important Dates:

Mon, 26 Jan: Last day to add classes or drop classes with no record

Tue, 17 Feb: Exam I

Mon, 9 Mar: Midterm grades due (visible on Howdy)

Thurs, 12 Mar: Exam II

Fri, 3 Apr: Reading Day (no classes meet)

Tues, 21 Apr: Last day to Q-drop classes

Tues, 28 Apr: Exam III

Tues, 5 May: Redefined as FRIDAY: attend your Friday classes this day

Wed, 6 May: Reading Day (no classes meet)

Thurs, 7 May: FIRST DAY OF FINALS (CHANGE FROM FALL!)

   Final Exam 12:30pm (501) or 3pm (502) in BLOC 161

Course Emphasis:
The priorities of this course are:
   1. Ability to correctly solve problems and write the solutions in a coherent fashion.
   2. Conceptual understanding of material
   3. Ability to state and apply definitions and theorems and provide simple proofs

Because of this, each exam will consist of computational problems, applications, concept questions, statement of definitions and theorems, and simple proofs using definitions and theorems. On all assignments, emphasis will be placed on how a problem is solved and how a solution is written up. Bottom line: “getting the right answer” is not nearly as important as providing a clear detailed explanation of the reasoning behind your answer.

You will be required to provide a blue book (at least 8x10 and 16 pages) for each exam. These must be given to me at least by 9am the day of the exam. You may bring all 4 of them at once or each one separately. Failure to give me a blue book in advance will result in a deduction of points from your exam score (2 points the first time, penalty doubles each time thereafter).