

Engineering Mathematics I: Math 151

Sections 810, 811, 812

Fall 2010, MWF 9:10–10:00 in HELD 113

Professor: Michael Anshelevich, 326 Milner, manshel@math.tamu.edu, 845–6679 (please use email).

Webpages: www.math.tamu.edu/~manshel/m151/m151.html and www.math.tamu.edu/courses/courseInfo.php?semester=2010C&course=151.

Office hours: MW 11:30–12:30, T 2:00–3:00, or by appointment.

TA: Bingsheng Zhang. Labs:

- Section 810, T 2:20–3:10 in BLOC 124 and R 2:20–3:10 in CE 223.
- Section 811, T 5:30–6:20 in BLOC 124 and R 5:30–6:20 in CE 223.
- Section 812, T 8:00–8:50 in BLOC 123 and R 8:00–8:50 in CE 006.

Text: Stewart, *Calculus: Early Vectors (Aggie Version)*, Brooks/Cole Publishing. Go to the website tamumath.ichaptersbuy.com for special pricing. The computer laboratory will also use Gilat Amos, *Matlab: An introduction*, 3rd edition, Wiley, ISBN 0471694207.

Learning Objectives: This course is to provide students with quantitative and problem-solving skills of 2-dimensional vectors and differential calculus. At the conclusion of this course, students should be able to:

1. Know and use techniques of limits and differentiation.
2. Apply techniques of differentiation to a variety of applications, including engineering applications.
3. Understand and apply vector operations in 2-dimensions, including dot product.
4. Understand the relationship between derivatives and integrals via the Fundamental Theorem of Calculus.
5. Use Computer Algebra Systems such as Matlab to solve applied problems.

Course description: Credit 4. The course meets three times per week in lecture and twice per week in recitation. The Thursday recitation meeting is designed to discuss questions over homework or lecture. The Tuesday recitation meets in the computer laboratory where the computer package Matlab will be introduced. The goal of the laboratory portion of the course is to show how problems that are too difficult to solve by hand, can be solved with the help of the computer. The prerequisite for this course is either Math 150 (precalculus) or a good high school mathematics background that includes algebra II, analytic geometry and trigonometry.

Exams: We will have three midterm tests on Thursdays, **September 30**, **October 28**, and Tuesday, **November 30**, 7:30–9:30 p.m. These are common exams (the same exam is given for all sections of Math 151). The final exam will be on Monday, **December 13**, 8–10 a.m. If, under *completely exceptional* circumstances, you need to miss one of the tests, a make-up exam will be given. Only University-approved excuses will be accepted, and you have to let me know preferably in advance, and no later than 2 days after the exam. The exams are closed book, closed notes, and calculators are not allowed. You should bring your ID to all tests. Copies of old exams are available on the web.

Grading: A total score of 90% or more guarantees an A, a score of 80% or more a B, 70% or more a C, 60% or more a D.

Average of Exams I, II, and III	50%
Final	25%
Lab (online homework, quizzes, Matlab assignments)	25%

Homework: The class will have online homework which will contribute to the lab grade. There will also be suggested homework problems, which will help you to master the material and prepare you for the tests.

Quizzes: There will be weekly quizzes, administered in the labs on Thursdays. In addition, there may be occasional unannounced pop quizzes during lecture. The lowest score will be dropped.

Scholastic Dishonesty: Cheating of any form is not acceptable and it will be dealt with harshly. In particular, copying work done by others, either in-class or out of class, is an act of scholastic dishonesty and it will be prosecuted to the full extent allowed by university policy. Students are encouraged to discuss the course material outside of class, however all the homework assignments must be done individually. For more information on university policies regarding scholastic dishonesty, see the University Student Rules.

Aggie Honor Code: “An Aggie does not lie, cheat, or steal or tolerate those who do.”

Other important dates: September 3 (last day to add or drop a course), November 25–26 (Thanksgiving), December 6 (last day of classes).

Students with disabilities: Come talk to me no later than the first week of classes. “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 that you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Room 126 of the Koldus Building or call 845–1637.”

Attendance: According to the University Student Rules, absence for three or more class days requires a University-approved excuse and documentation.

Keys to success: Attend class (of course :) Solve *all* the homework problems, well before the exams. Spend more than seven hours per week working on the problems. Form study groups to discuss the course material and homework problems. Read ahead in the text.

Course topics: See the web page for a weekly schedule.

- Introduction to vectors (Chapter 1).
- Limits, tangents, and rates of change (Chapter 2).
- Derivatives: definition and techniques (Chapter 3).
- Inverse functions: exponential, logarithm, and inverse trigonometric (Chapter 4).
- Derivatives: applications (Chapter 5).
- Integrals: preparation for Math 152 (Chapter 6).

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