MATH 171: Section 502

Calculus I

Instructor: Amy Austin
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Office hours: MW: 2-4 or by appointment.
Content: This course will cover vectors in two dimensions, differentiation and integration of functions of one variable, and applications.
Grades: Your grade will be determined by 3 exams, a comprehensive final, and the lab grade as follows:
   Exam I: 15%
   Exam II: 15%
   Exam III: 15%
   Final Exam: 25%
   Quizzes: 15%
   Worksheets: 15%
Tentative Exam Schedule:
   EXAM I: Week of Sept 25
   EXAM II: Week of Oct 23
   EXAM III: Week of Nov 27
   FINAL EXAM: Tuesday, December 12 8-10 am
Homework: Homework will be assigned but not collected. It is imperative that you do all assigned homework and get any necessary help should you have difficulty.
Worksheets: Weekly worksheets will be assigned and collected each Friday. The worksheets will be graded and returned to you the following week. NO late worksheets will be accepted. The best 10 worksheets will be averaged at the end of the term.
Quizzes: Weekly quizzes will be administered each Tuesday. The best 10 quizzes will be averaged at the end of the term. Should you miss a quiz, you MUST present a University excused absence and make up the quiz within one week. Otherwise the grade will turn to zero.
Make-up policy: No make-ups will be given without written evidence of an official University excused absence. (See University Student Rules.) According to Section 7.3 of the University Student Rules, for an absence to be considered excused, 'the student must notify his or her instructor in writing (acknowledged e-mail message is acceptable) prior to the date of absence if such notification is feasible. In cases where advance notification is not feasible, the student must provide notification by the end of the second working day
after the absence. This notification should include an explanation of why notice could not 
be sent prior to the class. "If no such notice is given, the rights to a make-up are forfeited. 
In addition (and also in accordance with University Student Rules), a written excuse must 
be presented upon return to class. Specifically, in the case of illness or injury, students 
are required to obtain a confirmation note from a health care professional affirming date 
and time of a medical office visit regarding the illness or injury and confirming the need 
of absence before a make-up will be given.

**Academic Integrity Statement:** "An Aggie does not lie, cheat, or steal or tolerate 
those who do". I further refer the student to the Honor Council Rules and Procedures on 
the web at http://www.tamu.edu/aggiehonor.

**Students with Disabilities:** 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 dis-
abilities 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 the Department of Student Life, Services for Students with Disabilities, in Room 
126 of the Koldus Building or call 845-1637.

**Sources of help:** Use it!

1. **Office Hours:** MW: 2-4. My door will be open during these times, and students are 
   encouraged to attend.

2. **Week in Review:** Each week, I will conduct a week in review every Wednesday, 
   7-9 pm BLOC 102. Students are highly encouraged to take full advantage of this 
   extra help. Note that success on common exams requires LOTS of practice. This 
   is one resource for you to obtain extra practice in order to master the material. See 
   http://www.math.tamu.edu/~amy.austin/livewirmath151.html for more information.

3. **Streaming Video:** For streaming video of math 151/171 problems, see 
   http://www.math.tamu.edu/~amy.austin/wirmath151.html for more information.

4. **Help Sessions:** The Math department offers help sessions for math 171. See 
   http://www.math.tamu.edu/teaching/helpsession/ for more information.

5. **Hire a private tutor:** For a list of tutors, go to BLOC 602 and inquire within.
COURSE SCHEDULE

- **Week 1** Introduction, precalculus review (lines, functions, and trigonometry), two dimensional vectors. *Chapter 0 and section 1.1, 1.2*. The precalculus chapter will be reviewed very rapidly.

- **Week 2** Dot product, parameterized curves, definition of limit. *Sections 1.3, 2.1, 2.2, 2.3* Section 1.2 on tangent and velocity will be done rapidly and only to motivate limits. The concepts of tangents and velocity will be revisited later.

- **Week 3** Calculation of limits, limits at infinity, continuity, velocity. *Sections 2.3, 2.4, 2.5, 2.6, 2.7*. Limits at infinity will be covered rapidly.

- **Week 4** Differentiation and rates of change. *Sections 3.1, 3.2, 3.3*

- **Week 5** Derivatives of the trigonometric functions, the chain rule and Exam I. *Sections 3.4, 3.5*

- **Week 6** Implicit differentiation, higher derivatives, derivatives of vector-valued functions and parameterized curves. *Sections 3.6, 3.7, 3.8, 3.9.*

- **Week 7** Related rates, exponential functions and inverse functions. *Sections 3.10, 4.1, 4.2.*

- **Week 8** Logarithmic functions and exponential growth and decay. *Sections 4.3, 4.4, 4.5*

- **Week 9** Inverse trigonometric functions, L’Hospital’s rule and Exam II. *Sections 4.6, 4.8.*

- **Week 10** Mean Value Theorem, critical points and first derivative test. *Sections 5.1, 5.2, 5.3.*

- **Week 11** Second derivative test and applied max/min. *Sections 5.4, 5.7.*

- **Week 12** Antiderivatives and Riemann sums. *Sections 5.9, 6.1, 6.2*

- **Week 13** The definite integral and the Fundamental theorem of Calculus. *Sections 6.3, 6.4.*

- **Week 14** Substitution rule and Exam III. *Section 6.5*

- **Week 15** Review for final.