Instructor: Dr. Janice Epstein, Blocker 641H, 845-3261

Office Hours: Mondays 9:30 – 11:00 and Wednesdays 10:00 – 11:30. Also by appointment.

Email: j-epstein@tamu.edu. Include your full name and class/section number in all email

Webpages: [www.math.tamu.edu/~epstein/Math151](http://www.math.tamu.edu/~epstein/Math151)
[http://www.math.tamu.edu/courses/math151/](http://www.math.tamu.edu/courses/math151/)
[http://www.math.tamu.edu/courses/math151/matlabsched.html](http://www.math.tamu.edu/courses/math151/matlabsched.html)
[http://www.math.tamu.edu/courses/eHomework/](http://www.math.tamu.edu/courses/eHomework/)

Teaching Assistant: Bingbing Ji. E-mail: iice@math.tamu.edu


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:

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

Common Exams: Engineering Calculus I and II have Common Exams in the evenings. If you have a class conflict with these exams, you must provide documentation IN AHEAD OF TIME and then arrangements will be made for you to make-up the exam.

Recitation: Every Monday, students will attend weekly recitation meetings. During this time, weekly activities will be assigned. The students will work in groups of 3 or 4 and during recitation they will complete the activity, with the supervision/help of the TA. Students will turn this in for a weekly graded assignment.

MatLab: Every Wednesday, students will attend weekly MatLab meetings. During the first 15-20 minutes of MatLab, students will have a quiz. After the quiz, students will work on the assigned MatLab that is due the following week.

WebAssign: Online homework on WebAssign is required.

Attendance & Make-up Policy: Attendance is required in this class. No make-up exams or late assignments are possible without a University-approved excused absence (see the Texas A&M University Student Rules). An absence for a non-acute medical service or regular check-up does not constitute an excused absence.

To be excused, you must notify me in writing prior to the date of absence if possible. Consistent with Texas A&M Student Rules, in cases where advance notification is not feasible (e.g. accident, or emergency) 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.

For injury or illness too severe or contagious to attend class, you must provide confirmation of a visit to a health care professional affirming date and time of visit. The Texas A&M University Explanatory Statement for Absence from Class form will not be accepted. It is the student's responsibility to schedule a make-up in a timely manner.
**Extra Help & Preparing for Exams**

**Office Hours:** Please attend office hours for additional one-on-one help.

**Week-in-Review:** The Week-in-Review is a review session for all Math 151 students once per week to review the topics of the previous week and to provide additional examples. See [http://www.math.tamu.edu/~kahlig/151WIRpage.html](http://www.math.tamu.edu/~kahlig/151WIRpage.html)

**Help Sessions:** Help sessions are an opportunity for you to ask questions and get help with your homework. Students who have previously taken Math 151 lead the help sessions. These don’t usually start till the second week of school. As soon as it is available, the schedule will be posted here: [http://www.math.tamu.edu/courses/helpsessions.html](http://www.math.tamu.edu/courses/helpsessions.html)

**Copyright:** All exams, printed handouts and/or assignments, and web-materials are protected by U.S. Copyright Laws. No multiple copies can be made without my written permission. No exams or assignments may be shared with anyone outside of the class.

**Electronic Device Policy:** Cell phones, laptops, and other electronic devices must be silent and put away during class. If you are unable to comply with this policy, you will be asked to leave class and will not be allowed to make-up any assignments missed in class that day.

**Academic Integrity Statement:**

An Aggie does not lie, cheat, or steal or tolerate those who do.

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System. For additional information please visit: [http://www.tamu.edu/aggiehonor/](http://www.tamu.edu/aggiehonor/)

**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 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 additional information visit [http://disability.tamu.edu](http://disability.tamu.edu)

**Grading:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Three Exams</td>
<td>50%</td>
</tr>
<tr>
<td>Homework (WebAssign)</td>
<td>5%</td>
</tr>
<tr>
<td>MatLab Assignments</td>
<td>10%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>5%</td>
</tr>
<tr>
<td>Recitation Activities</td>
<td>5%</td>
</tr>
<tr>
<td>Cumulative Final</td>
<td>25%</td>
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Required Averages: A 90–100%  B 80–89%  C 70–79%  D 60–69%  F 0–59%

**Final Exam:** Monday, May 7 from 8:00 – 10:00 AM in HELD 111
**Tentative Schedule:** All changes will be announced in class or on the web or via e-mail.

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Sections/Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan. 16 – 20</td>
<td>Appendix D, Section 1.1 Introduction Trigonometry review Two-dimensional vectors</td>
</tr>
<tr>
<td>2</td>
<td>Jan. 23 – 27</td>
<td>Sections 1.2, 1.3, 2.2 Dot product Parameterized curves Qualitative definition of limits</td>
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<tr>
<td>3</td>
<td>Jan 30 – Feb. 3</td>
<td>Sections 2.3, 2.5, 2.6 Calculation of limits Limits at infinity Continuity</td>
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<tr>
<td>4</td>
<td>Feb. 6 – 10</td>
<td>Sections 2.7, 3.1, 3.2 Velocity Differentiation</td>
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<td>5</td>
<td>Feb. 13 – 17</td>
<td>Sections 3.3, 3.4 Rates of Change Derivatives of the trigonometric functions <em>Exam I (Thursday, covering thru Section 3.2)</em></td>
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<tr>
<td>6</td>
<td>Feb. 20 – 24</td>
<td>Sections 3.5, 3.6, 3.7 Chain rule, implicit differentiation Derivatives of vector-valued functions</td>
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<tr>
<td>7</td>
<td>Feb. 27 – Mar 2</td>
<td>Sections 3.8, 3.9, 3.10 Higher derivatives Tangents of parameterized curves Related rates</td>
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<tr>
<td>8</td>
<td>Mar. 5 – 9</td>
<td>Sections 3.11, 4.1, 4.2 Differentials and approximation Exponential and inverse functions</td>
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<td>Spring Break</td>
<td>Mar. 12 - 16</td>
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<tr>
<td>9</td>
<td>Mar. 19 – 23</td>
<td>Sections 4.3, 4.4 Logarithmic functions, derivatives of logarithms <em>Exam II (Thursday, covering Sections 3.3-4.2)</em></td>
</tr>
<tr>
<td>10</td>
<td>Mar. 26 – 30</td>
<td>Sections 4.5, 4.6, 4.8 Exponential growth and decay Inverse trigonometric functions L’Hospital’s Rule</td>
</tr>
<tr>
<td>11</td>
<td>Apr. 2 – 6</td>
<td>Sections 5.1, 5.2, 5.3 Graphical interpretation of the derivative First and second derivative tests</td>
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<tr>
<td>12</td>
<td>Apr. 9 – 13</td>
<td>Sections 5.5, 5.7, 6.1 Applied max/min Antiderivatives Riemann sums</td>
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<tr>
<td>13</td>
<td>Apr. 16 – 20</td>
<td>Sections 6.2, 6.3 Area The definite integral</td>
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<tr>
<td>14</td>
<td>Apr. 23 – 27</td>
<td>Section 6.4 The Fundamental Theorem of Calculus <em>Exam III (Tuesday, coveringSections 4.3-6.3)</em></td>
</tr>
<tr>
<td>15</td>
<td>May 1</td>
<td>Class does not meet this week. Attend your Friday classes on May 1.</td>
</tr>
</tbody>
</table>
Suggested Homework:

For Exam 1,
- Appendix D: 1, 4, 9, 19, 23, 25, 27, 29, 33, 46, 55, 63, 67, 69, 77
- Section 1.1: 3, 5, 9, 13, 17, 19, 21, 25, 27, 29
- Section 1.2: 1, 5, 7, 13, 15, 17, 21, 25, 31, 35, 37, 41, 43, 51, 53, 55
- Section 1.3: 1, 3, 7, 11, 15, 19, 25, 27, 29, 31, 34
- Section 2.1: 1, 3, 5, 11
- Section 2.2: 3, 5, 7, 13, 17, 21
- Section 2.3: 3, 5, 6, 7, 13, 19, 23, 27, 39, 41, 45, 55, 67, 71
- Section 2.5: 1, 3, 9, 15, 17, 23, 29, 33, 37, 39, 43, 47
- Section 2.6: 3, 11, 17, 27, 29, 35, 45, 47
- Section 2.7: 1, 3, 5, 9, 11, 15, 17, 21, 23
- Section 3.1: 1, 5, 7, 13, 15, 23, 33, 34, 37, 39, 41, 47, 51, 53
- Section 3.2: 3, 7, 9, 15, 19, 23, 29, 37, 39, 43, 50, 53, 55, 61, 70, 72

For Exam 2
- Section 3.3: 3, 7, 9, 11, 13, 17, 23
- Section 3.4: 5, 7, 11, 15, 19, 21, 23, 27, 31, 33, 45
- Section 3.5: 3, 7, 11, 13, 27, 33, 49, 51, 57, 59, 79, 80
- Section 3.6: 1, 5, 11, 13, 21, 25, 27, 33, 35, 39, 45
- Section 3.7: 3, 5, 11, 13, 17, 21
- Section 3.8: 1, 2, 5, 11, 17, 31, 35, 43, 46, 49, 51
- Section 3.9: 3, 5, 7, 9, 13, 17, 21
- Section 3.10: 5, 7, 9, 11, 15, 17, 19, 23, 27, 31, 33
- Section 3.11: 3, 9, 10, 14, 23, 27, 35, 36, 38, 39, 41, 45
- Section 4.1: 3, 6, 7, 10, 17, 21, 25, 27, 29, 31, 35, 43, 47, 49, 59
- Section 4.2: 3, 5, 7, 11, 13, 15, 19, 23, 25, 31, 35

For Exam 3
- Section 4.3: 3, 7, 11, 19, 21, 25, 29, 39, 43, 45, 51, 61, 70, 73, 79, 87
- Section 4.4: 3, 7, 9, 13, 19, 27, 35, 39, 51, 59
- Section 4.5: 3, 5a), 9, 11, 13, 15, 19, 21
- Section 4.6: 3, 9, 17, 23, 27, 31, 35, 45, 51, 53, 65, 66
- Section 4.8: 3, 9, 13, 17, 19, 25, 39, 41, 47, 55, 57, 61, 65
- Section 5.1: 1, 3, 5, 11, 13, 17, 19, 21
- Section 5.2: 3, 7, 11, 17, 19, 25, 27, 31, 37, 39, 41, 43, 45
- Section 5.3: 1, 5, 7, 9, 13, 17, 19, 21, 35, 43, 45
- Section 5.5: 1, 5, 7, 9, 13, 17, 19, 23, 27, 29, 31, 33, 39
- Section 5.7: 3, 7, 9, 15, 17, 21, 23, 27, 31, 37, 39, 41, 43, 45, 49, 59, 61, 65, 71, 73, 79
- Section 6.1: 5, 9, 19, 25, 41b), 43
- Section 6.2: 1, 5, 13, 15 (at least be able to setup the Riemann sum for 13 and 15), 23
- Section 6.3: 7, 11, 17, 33, 35, 45, 47, 53, 55

For the Final
- Section 6.4: 1, 3, 7, 9, 11, 19, 23, 27, 31, 41, 47, 51, 57, 73, 77, 79, 83, 93, 95