MATH FOR BUSINESS: CALCULUS

by Sixian Jin

Lecture: TWR 1:00 pm-4:00 pm
Instructor’s contact information:
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Office hours: TBD
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Textbook

Course content
This course serves as an introduction to differential and integral calculus. We will cover the derivatives, method of differentiation and their applications. Also we will cover integration. Moreover, we will make connections between math and real life problems such as in business and economic.

Grade Distribution:

<table>
<thead>
<tr>
<th>Attendance</th>
<th>Homework</th>
<th>Quizzes</th>
<th>Midterm 1</th>
<th>Midterm 2</th>
<th>Final</th>
</tr>
</thead>
<tbody>
<tr>
<td>5%</td>
<td>5%</td>
<td>10%</td>
<td>25%</td>
<td>25%</td>
<td>30%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A (A-)</th>
<th>(B+)</th>
<th>B (B-)</th>
<th>(C+)</th>
<th>C (C-)</th>
<th>D</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥93 (92-90)</td>
<td>(≥87)</td>
<td>86-83</td>
<td>(≥77)</td>
<td>76-73</td>
<td>69-60</td>
<td>≤59</td>
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</table>

I may curve upward for exams’ grades and take individual circumstances into account when assigning final grades.

Homework
Homework will be handled through WebAssign. This is a website for submitting your homework online, and you will receive instant feedback on your work. Details on signing up for WebAssign will be given during the first two weeks of class.
The assigned homework will probably not give you enough practice to prepare you for the exams. Thus, you should also work through the recommended problems on your own.
In math there is no substitute for individual concentration. You are welcome to discuss and collaborate (except on exams!), but you should make sure that you learn to solve problems independently, as relying too much on your classmates can be detrimental to exam preparation.
**Lecture notes**
The incomplete lecture notes will be uploaded on Blackboard at least two days before each lecture. You are recommended to print them and bring to the class (that will save your time from writing everything down). The complete lecture notes will be uploaded after each whole finished chapter.

**Quizzes**
4 Quizzes will be given during the lectures. Each quiz will contain 2 to 3 questions, with 30 to 45 minutes.

**Midterms**
The midterms’ dates are TBD.

**Final exam**
The final exam day is TBD
The final exam will be cumulative, but may slightly emphasize material covered between the second midterm and the last day of class. Anyone who miss the final exam without a strong excuse and approval in advance will receive a grade “F” regardless of the previous accumulated scores.

**Missed work**
In general, late work, missed quizzes, and missed exams will count as zero points. If you miss (or are going to miss) a deadline or an exam for a valid reason, such as a medical emergency, please contact me as soon as possible (even beforehand) so that we can discuss extending a deadline, excusing you from the exam, or making up the exam.

**Attendance**
Attendance and participation are expected at every lecture. I will take attendance at each recitation and randomly at lectures because I have a duty to maintain accurate records relating to our course. (The deans request this information from instructors three or four times each semester.)

**Calculators and computers**
Calculators or computers will not be allowed on exams or quizzes. So I urge you to work without them as much as possible when doing homework or preparing for the exams.

**Academic Integrity**
From the faculty handbook for teaching undergraduates:
"Academic integrity is the pursuit of scholarly activity in an honest, truthful, and responsible manner. Violations of academic integrity include, but are not limited to, plagiarism, cheating on exams, falsification, unapproved collaboration, and destruction of library materials. Below are instances of violations with which all members of the academic community should be familiar.
Plagiarism occurs when individuals attempt to present as their own what has come from another source.
Plagiarism takes place whether such theft is accidental or deliberate. It is no defense to claim that one has 'forgotten' to document ideas or material taken from another source. Examples of plagiarism include, but are not limited to:
1. Using the ideas of another person, whether or not such ideas are paraphrased, from whatever source, including oral, print, broadcast, or computer-mediated communication;
2. Rewriting borrowed material by simply dropping a word here and there, substituting a few words for others, or moving around words or sentence."
If you use ANY resource to help you in solving a problem, you must reference the resource. Such resources include, but are not limited to, other professors, fellow classmates, other textbooks, online resources.
If you plagiarizes, you will receive a grade of 0% on the assignment, quiz, or exam.
Disabilities
If you are a student with a documented disability and require academic accommodations, you need to register with the Office of Disability Services for Students (ODS) in order to request academic accommodations for your courses. Please contact the main ODS office at Rose Hill at 718-817-0655 to arrange services. Staff at ODS can walk you through the process and arrange appointments depending on which campus you take courses at. Accommodations are not retroactive, so you need to register with ODS prior to receiving your accommodations. Please see me after class or during office hours if you have questions or would like to submit your academic accommodation letter to me.

Tentative Time Schedule

<table>
<thead>
<tr>
<th>Hours</th>
<th>Chapter</th>
<th>Section</th>
</tr>
</thead>
</table>
| 6     | 2. Derivative | 2.1 Measuring change  
2.2 Limits  
2.3 Rate of change and derivatives  
2.4 Derivative as a function |
| 8     | 3. Techniques of Differentiation | 3.1 Initial derivative formulas  
3.2 Linear approximation, Product and Quotient rules  
3.3 Chain rule  
3.5 Implicit Differentiation and logarithms |
| 2     | Midterm 1       |                                                                         |
| 7     | 4. Application of Differentiation | 4.1 Related rates  
4.2 Extreme values  
4.3 Derivatives and shape of curves  
4.4 Asymptotes  
4.5 Curve sketching  
4.6-4.7 Optimization |
| 6     | 5. Integrals   | 5.1 Definite integral  
5.2-5.3 Fundamental theorem, net change  
5.4 Integration by substitution rule |
| 2     | Midterm 2       |                                                                         |
| 10    | 6. Application of Integration | 6.1 Area between curves  
6.2 Application to finance  
6.4 Differential equation  
7.5 Improper integrals  
7.6 Probability |
| 2     | Final           |                                                                         |