

## Calculus I Syllabus

Instructor: Sarah Kovacs  
Course: Math 1A  
Day/Time: M/W 6:00-7:50  
Location: S104

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**Office Hours:**  
M/W 1:30-2:20  
T 12:00-1:50  
TH 2:00-2:50 (Online)

I will begin with 3 things:

**One** Everything is going to be ok. Some of you may have some concerns about taking a *Math* class. This is not going to be torture. I am not here to fail you or humiliate you. This is going to be a positive mathematical experience, even if you think you are “bad” at math.

**Two** Math can be enjoyable. You may even have fun in this class. I have made it a personal goal to help my students see that math can be interesting and sometimes even enjoyable.

**Three** Considering one and two, are you thinking this class is going to be a breeze? NOPE! Succeeding in math takes a great deal of work. I will do everything I can to help make this a positive mathematical experience for all of you, but in the end it is mostly on your shoulders. Expect to put in **at least 5 hours** a week outside of the classroom doing homework or studying. You can succeed but you need to put in a real effort.

### Topics covered:

A first course in differential and integral calculus of a single variable: functions; limits and continuity; techniques and applications of differentiation and integration; fundamental theorem of calculus. Primarily for science, technology, engineering and mathematics majors.

### Student Learning Outcome:

Evaluate limits and use them to find derivatives. Evaluate derivatives and interpret derivatives as rates of change and/or slopes of tangent lines. Solve applications that require differentiation such as applied optimization and related rates. Determine the behavior of a function from its derivatives. Evaluate integrals and interpret integrals as total changes and/or bounded areas. Compose simple proofs.

**Prerequisite:** MATH 20 and MATH 21 with a grade of C or better or satisfactory score on the mathematics placement test.

### Required Resource:

- Text: Jon Rogawski, Calculus: Early Transcendentals, 3<sup>rd</sup> edition, ISBN: 978-1-4641-1488-5
- Scientific Calculator (TI-30X or equivalent)

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## Grading

Homework	20%	Above 90%	A
In-Class Assignments	5%	80%-90%	B
Portfolio	5%	70%-80%	C
Exams	40%	60%-70%	D
Final	30%	Below 60%	F

## **Homework**

There will be homework assigned every class session. The majority of your homework will be “practice homework” which is odd exercises from the textbook. The answers to the odd questions are in the back of the text, so you will have feedback on whether you are doing the work correctly. Hint: you will learn better by not looking at the answer until you have tried every possible technique for solving the exercise. Practice solving the exercises, not just making your answer look like the answers in the back of the book. You will **not** be turning in your “practice homework.”

You will also have several even questions from the each section as “graded homework” that you will be turning in on Mondays.

Expect a lot of homework. Trying the math yourself is the only way to learn. This may take more time for some than others but everybody should expect at least 2 hours of homework for each hour of class session. I recommend doing homework every day rather than only on Sunday night.

There is a one class leniency period for late homework. Later homework is accepted with a 1 point penalty per class session. Each assignment is worth 10 points. I will be dropping your two lowest homework grades.

## **In-Class Assignments**

We will be doing daily in-class assignments during class each day. These are short open note, open book exercises that relate to the material we covered in class that day. You can work in pairs or groups. Each in-class assignment is worth 1 point. If you miss class, you can access the assignment on Canvas and turn it in the following class session for credit. You can miss two without penalty.

## **Math Portfolio**

You need to keep a math portfolio that contains all of your homework, in class assignments, and exams. You need to make one correction from each weekly graded homework assignment and correct all questions from exams (unless it is 100% correct). You will turn in the math portfolio five times during the semester on test days and the day of the final. Each portfolio submission is worth 5 points. I will be dropping your lowest portfolio score.

## **Exams**

We will have four tests throughout the semester. These help me evaluate how much you know. Studying for tests can also help you bring together all the material we have covered in a certain period of time. Please don't let the tests stress you out. We will review. I will provide sample tests. With adequate effort everyone can be successful on the tests. Each test is worth 50 points.

## **Final**

The final is comprehensive. We will review and I will do everything in my power to help all of you succeed. If you do your homework, go to class, and put in the required effort, the final will go well for you. The final is worth 100 points.

**The final is Wednesday May 15<sup>th</sup> 6:00-7:50.** No exceptions! You must take the final when scheduled unless you talk to me about it **the first week of class.**

## Tentative Schedule

Jan 14 <sup>th</sup> Introduction/Ch 1	16 <sup>th</sup> 2.1/2.2
21 <sup>st</sup> HOLIDAY	23 <sup>rd</sup> 2.2/2.3
28 <sup>th</sup> 2.4/2.5	30 <sup>th</sup> 2.6/2.7
Feb 4 <sup>th</sup> 2.8/2.9	6 <sup>th</sup> 2.9/3.1
11 <sup>th</sup> 3.1/Review	13 <sup>th</sup> 3.2/ Exam 1 (Ch 2)
18 <sup>th</sup> HOLIDAY	20 <sup>th</sup> 3.2/3.3
25 <sup>th</sup> 3.4/3.5	27 <sup>th</sup> 3.6/3.7
March 4 <sup>th</sup> 3.7/3.8	6 <sup>th</sup> 3.9/3.10
11 <sup>th</sup> 3.10/4.1	13 <sup>th</sup> 4.1/Review
18 <sup>th</sup> 4.2/Exam 2 (Ch 3)	20 <sup>th</sup> 4.2/4.3
25 <sup>th</sup> 4.3/4.4	27 <sup>th</sup> 4.5/4.6
April 1 <sup>st</sup> -5 <sup>th</sup> Spring Break	
April 8 <sup>th</sup> 4.6/4.7	10 <sup>th</sup> 4.7/4.8
15 <sup>th</sup> 5.1/Review	16 <sup>th</sup> 5.1/Exam 3 (Ch 4)
22 <sup>nd</sup> 5.2/5.3	24 <sup>th</sup> 5.3/5.4
29 <sup>th</sup> 5.5/5.6	May 1 <sup>st</sup> 5.6/5.7
6 <sup>th</sup> 5.8/Review	8 <sup>th</sup> 5.8/Exam 4 (Ch 5)
13 <sup>th</sup> Review	15 <sup>th</sup> FINAL!!!

Practice Homework Schedule	
Due Date	Assignment
23 <sup>rd</sup>	2.1: 1,3,7,9,13,15,17,19,21,23,25,27,31
28 <sup>th</sup>	2.2: 1,3,5,11,15,17,21,23,25,27,29,31,33,35,37,41,45,47,49,51,53,57,63 2.3: 9,11,13,15,17,19,21,23,25,27,29,31
Feb 4 <sup>th</sup>	2.4: 1,3,5,9,15,19,21,25,27,29,31,33,37,39,41,43,49,51,53,55,57,59,61,63,65,69,75,79,81,83 2.5: 1,7,11,15,17,21,23,25,27,29,31,33,35,37,41,43,47,49,51,55,57 2.6: 1,5,7,9,11,15,19,21,23,25,27,31,33,35,37,39,41,43,45,47,49,51,53,57 2.7: 1,3,5,9,13,15,17,19,21,23,25,27,29,31,33,35,37,39,41,43
11 <sup>th</sup>	2.8: 1,3,5,7,9,11,13,15,17,19,21,23 2.9: 1,3,5,7,9,11,13,15,17,19,21,23,25,29
20 <sup>th</sup>	3.1: 1,5,7,9,11,13,15,19,21,23,25,29,31,33,35,37,39,41,43,47,49,53,55,57,59,61,63,65,67,69
25 <sup>th</sup>	3.2: 3,9,13,17,19,23,25,31,35,37,41,43,45,47,49,51,53,57,59,61,63,67,69,71,75,77,85,87,95 3.3: 3,5,9,11,13,17,21,23,27,29,31,33,35,37,39,41,43,45,47,49,51,53,55
March 4 <sup>th</sup>	3.4: 1,3,5,7,11,13,15,17,19,23,25,27,31,33,35,37,39,43,45 3.5: 3,7,11,13,15,17,19,21,23,25,27,29,31,33,35,37,39,41,43,45,47 3.6: 3,9,11,13,15,17,19,21,23,25,31,33,35,37,39,41,43,45,47,49,51,53
11 <sup>th</sup>	3.7: 1,5,7,11,13,15,17,19,21,23,25,29,31,33,35,37,39,41,43,45,49,51,53,57,59,61,63,65,67,69,71,73,75,77,79,81,83,87,89,91,93 3.8: 3,7,9,11,13,15,17,19,21,23,27,29,31,33,39,43,45,47,53,55,57,59,61,63,65,67,69,71,73,75,79 3.9: 1,5,11,13,15,17,19,21,23,25,27,29,31,33,35,37,39,41,43,45,47,49,51,55,57,59,61
18 <sup>th</sup>	3.10: 1,3,5,7,9,11,13,15,17,19,21,23,25,29,31,33,35,37 4.1: 3,7,9,11,15,17,19,21,23,25,27,29,31,33,35,37,39,41,43,47,49,53,57,59,61,63,65
25 <sup>th</sup>	4.2: 7,9,11,15,17,19,21,25,33,39,43,45,47,51,53,55,57,59,65,67,69,73,77,79,83,85,87,89
April 8 <sup>th</sup>	4.3: 3,7,9,11,13,15,17,19,21,25,27,33,35,39,41,43,45,47,49,51,53,55,57,63 4.4: 5,7,9,13,15,17,19,21,23,27,29,31,33,35,37,39,45,47,51,55,57,59,61,63 4.5: 3,7,13,15,17,23,25,29,31,33,35,37,39,43,45,47,49,53,55,57,59,63,65,67
15 <sup>th</sup>	4.6: 9,13,19,23,25,27,29,31,33,35,41,43,45,49,51,55,57,61,63,65,67,69,73 4.7: 3,5,7,9,11,15,17,19,21,23,25,27,29,31,37,39,43,45,47,49,51,57,63 4.8: 3,7,11,13,19,23,25,27
22 <sup>nd</sup>	5.1: 3,5,9,11,13,17,19,23,25,27,29,31,33,37,41,43,47,49,51,55,59,61,63,65,67,69,71,73,75,77,81
29 <sup>th</sup>	5.2: 3,7,9,11,13,15,17,19,21,23,27,29,31,37,39,41,43,45,47,51,53,55,57,59,61,63,65,67,71,73,77,79 5.3: 3,5,7,13,17,19,23,27,29,31,33,37,39,41,43,45,49,51,55,59,61,63,67,69,71,73,75,77,81 5.4: 9,11,15,19,23,27,29,31,37,41,45,47,51,53,55,57,59,61
May 6 <sup>th</sup>	5.5: 3,9,11,13,15,17,23,25,27,29,31,33,35,37,39,41,43,45,47 5.6: 3,5,7,11,15,17,19,21,23,25 5.7: 3,5,7,9,11,15,17,19,21,25,31,33,37,39,43,45,49,53,57,59,63,65,67,69,71,73,75,77,81,83,87,89,91,93,95
13 <sup>th</sup>	5.8: 3,7,9,15,17,19,21,23,25,29,31,35,37,39,43,45,47,49,51,59,61,63,65,67,69,71,73

Graded Homework Schedule			
Due Date	Assignment		
Jan 23 <sup>rd</sup>	2.1: 2,18,20,24,26		
Jan 28 <sup>th</sup>	2.2: 22,34,40,44,50,52,56	2.3: 18,24,26,32	
Feb 4 <sup>th</sup>	2.4: 4,34,54,62,66,82	2.5: 14,26,32,48,54	2.6: 14,20,26,34,38
Feb 11 <sup>th</sup>	2.8: 10,12,18,22,26	2.9: 6,14,16,20,26,28	
Feb 20 <sup>th</sup>	3.1: 6,12,34,42,62,72		
Feb 25 <sup>th</sup>	3.2: 18,26,42,46,52,60,74	3.3: 18,24,32,38,42,52	
March 4 <sup>th</sup>	3.4: 12,16,18,44,46	3.5: 16,20,24,30,34,38,44	3.6: 12,18,28,34,38,42,44,50
March 11 <sup>th</sup>	3.7: 32,40,48,54,72,76,78,86	3.8: 24,36,56,60,70,78	3.9: 16,24,34,44,48,58,72,82
March 18 <sup>th</sup>	3.10: 8,16,18,22,28,30,34	4.1: 12,16,22,32,38,50,62	
March 25 <sup>th</sup>	4.2: 8,14,46,54,68,80,88		
April 8 <sup>th</sup>	4.3: 6,18,20,26,40,50,60,66	4.4: 2,16,26,40,46,54,58,64	4.5: 6,20,28,40,44,50,56,70
April 15 <sup>th</sup>	4.6: 28,32,46,50,66,72	4.7: 14,26,52,62,68	4.8: 6,8,10,14,24
April 22 <sup>nd</sup>	5.1: 16,32,40,50,60,70,78		
April 29 <sup>th</sup>	5.2: 14,22,40,52,68,74,78	5.3: 6,24,30,54,66,70,78,80	5.4: 10,22,30,36,46,50,56
May 6 <sup>th</sup>	5.5: 14,20,28,32,38,48	5.6: 4,12,18,22,24,26	5.7: 16,22,38,56,70,78,88
May 13 <sup>th</sup>	5.8: 6,24,42,50,64		

### **Academic/Classroom Etiquette**

- Tardiness will not be accepted.
- Please turn off your cell phones before entering class. Do not text during class.
- Please do not talk during class. You may be asked to leave the classroom if you are disruptive.
- Working together on homework is encouraged. Copying is plagiarism and is forbidden.
- Cheating on tests is a serious offense. If you are caught cheating you will receive a score of zero and be reported to the vice president. Repeated incidents of cheating can lead to expulsion.