Math 1B—Calculus, Spring 2018

Contents of this page

News

(May 18) Course grades are complete. I have added a detailed explanation of the grade computation algorithm under Grading policy, below.

(May 3) Posted answers to practice problems for final exam.

(May 1) Posted practice problems for the final exam.

(Apr 30) Prof. Haiman's RRR week office hours: Mon Apr 30 12-1, Wed May 2 12:30-1:30, Thu May 3 12-1.

(Apr 16) Online course evaluations are open from now until the end of RRR week. Please take a few minutes to evaluate this class.

(Apr 12) Midterm 2 is graded. Regrades close at the beginning of RRR Week

(Apr 4) Posted practice problems for Midterm 2, coming up this Monday. The exam is in the same rooms as Midterm 1.

(Feb 28) Midterm 1 grading is complete. Gradescope regrade requests will be open for a few weeks, closing before Spring Recess.

(Feb 26) We will be grading midterms online using Gradescope. You will receive email with a link to view your graded exam and make re-grade requests if needed. We hope to have the exams graded by Tuesday night or Wednesday.

(Feb 20) Midterm 1 will be held in **three rooms**. See below for which room you are in. I have posted some practice problems with answers.

(Jan 22) There is an audio-only webcast of this course on the bCourses page. No video, but if you miss a lecture the audio might be useful in conjunction with notes borrowed from another student.

(Jan 9) Welcome to Math 1B! Please check here for updates and announcements.

Professor and section instructors

Professor: Mark Haiman, 855 Evans Hall, mhaiman@math.berkeley.edu
Office hours MW 12-1:30 or by appointment. RRR week office hours: Mon Apr 30 12-1, Wed May 2 12:30-1:30, Thu May 3 12-1.

Section instructors and office hours:

- Katrina Biele, T-Th 5-6:30pm, 739 Evans
- Anningzhe Gao, MW 9:30-11, 1058 Evans
- Yanhe Huang, Tue 5-7pm and Thu 9-10am, 1066 Evans
- Bo Li, Wed 2-3:30 and Thu 9-10:30, 810 Evans
- Ziqi Lu, MW 12:30-2, 781 Evans
- Isabelle Shankar, T-Th 1-2:30, 739 Evans
- Max Wimberley, Wed 1-4, 775 Evans
- Jianwei Xiao, Fri 1-4, 1085 Evans
- Jiefu Zhang, WF 2:30-4, 1058 Evans
- Xinyu Zhao, Fri 10-11am and 5-7pm, 710 Evans

The Student Learning Center offers drop-in tutoring and a 1-unit adjunct Math 98 course for help with study strategies, problem solving and exam preparation.

Time and place

Lectures: MWF 11-12, 1 Pimentel Hall

Discussion sections: Tuesdays and Thursdays; see class schedule for section times and open seats. Students must enroll in the lecture and a discussion section. You must attend the section in which you are enrolled.

There is no waitlist on Cal Central for this class. Typically, some spaces open up early in the term. See the Math Department course enrollment guidelines and availability updates pages for more information. Please do not contact me asking for help with enrollment, as I have no control over it.

Description and prerequisites

Course catalog description: Continuation of Math 1A. Techniques of integration; applications of integration. Infinite sequences and series. First-order ordinary differential equations. Second-order ordinary differential equations; oscillation and damping; series solutions of ordinary differential equations.

The prerequisite for this course is Math 1A (or credit for an equivalent course). Students who have taken Math 16B receive 2 units of credit for Math 1B.

Textbook

James Stewart, *Single Variable Calculus: Math 1A,B at UC Berkeley, 8th Edition* (Cengage, 2016), ISBN 978-1-305-76527-6.

This is a custom version containing those chapters of Stewart's *Calculus: Early Transcendentals, 8th Edition* that we use for Math 1A and 1B at Berkeley. You can also use

the full 8th Edition. You may be able to get by with the 7th edition, but you will need to take note that some sections and exercises are different.

We will cover Chapters 7 and 8, on integration, Chapter 11 on infinite series, and Chapters 9 and 17 on differential equations.

Exams

There will be two midterm exams and a final exam. Midterm exams will take place during the lecture hour, in several rooms to allow for some extra space.

Midterm 1, Solutions

Monday, Feb 26, in three rooms:

- Last names A-D: 2040 VLSB
- Last names E-H: 60 Evans
- Last names I-Z: 1 Pimentel (the regular lecture room)

Covers Lectures 1-15; Homework Sets 1-5; Stewart Chapters 7 (omitting 7.6), 8.1-8.3, and 11.1-11.2. Here are some practice problems and answers.

Midterm 2, Solutions

Monday, April 9, same rooms as Midterm 1

Covers Lectures 16-30; Homework Sets 6-10 (and end of set 5); Stewart Chapters 11.3-11.11 and 9.1-9.5, as well as any earlier material needed to solve problems on these topics. Here are practice problems and answers.

Final Exam, Solutions

Tuesday, May 8, 7-10pm (exam group 8), RSF Fieldhouse

The final exam covers the entire course, with some extra emphasis on topics from after Midterm 2. Here are practice problems and answers. Please don't forget the online course evaluation.

Ground rules

Exam questions will be comparable in style and difficulty to the online homework problems. There will be space for answers on the exam paper, so you do not need blue books, but you should bring paper for scratch work.

On **midterms** you may use **one sheet of notes** which you prepare yourself, on normal sized paper, both sides. On the **final** you may use **two sheets of notes**. No other notes, books, calculators or electronic devices may be used during exams.

Missed exams

The class grading policy, below, allows you to miss one midterm exam essentially without penalty. For this reason there will be **no makeup exams** except in extraordinary circumstances.

Accommodations

Students who need special accommodations for exams must provide documentation from the Disabled Students' Program (DSP) and contact me at least two weeks before the first exam so that suitable arrangements can be made.

Homework

We will be using the online homework system WeBWorK. See below for instructions. WeBWorK allows you to make multiple attempts at each problem and get instant feedback as to whether your solution is correct. The online homework is due each Sunday night at 11:59pm, starting Jan. 28 for Homework Set 1.

You may collaborate with other students on the homework, provided that each person enters their own solutions into WeBWorK. If you do work together you will notice that WeBWorK creates a slightly different version of the problems for each student.

Copying homework solutions done by another student or by an automated system such as Wolfram Alpha is not allowed. Although I have no way to enforce this rule, I can assure you that copying solutions you have not worked out yourself will end up costing you more in the form of poor preparation for exams than whatever few extra homework points you might gain.

Syllabus

Schedule of lectures, reading and homework

Week	Lectures	Reading	WeBWorK	Remarks
1/17-1/19	1-2	7.1	Set 0	
1/22-1/26	3-5	7.2-7.5	Set 1	Lectures on 7.2-7.4. Study 7.5 for practice and review.
1/29-2/2	6-8	7.7-7.8	Set 2	
2/5-2/9	9-11	8.1-8.3	Set 3	Also read the part of 8.4 on Blood Flow
2/12-2/16	12-14	8.3 (cont'd), 11.1	Set 4	
2/21-2/23	15-16	11.2-11.3	Set 5	No class 2/19
2/26-3/2	17-18	11.4-11.5	Set 6	Midterm 1 Monday 2/26
3/5-3/9	19-21	11.6-11.9	Set 7	Lectures on 11.6, 11.8-11.9. Study 11.7 for practice and review.
3/12-3/16	22-24	11.10-11.11	Set 8	
3/19-3/23	25-27	9.1-9.4	Set 9	
Spring Recess 3/26-3/30				
4/2-4/6	28-30	9.3-9.4(cont'd), 9.5	Set 10	

4/9-4/13	31-32	9.6, 17.1	Set 11	Midterm 2 Monday 4/9
4/16-4/20	33-35	17.1(cont'd)-17.2	Set 12	
4/23-4/27	36-38	17.3-17.4	Set 13	Please do online course evaluation
Reading/Review Week 4/30-5/4				
Final Exam Tues, May 8, 7-10pm (exam group 8)				

Any changes to this schedule will be announced in class and posted on this page.

Instructions for using WeBWorK

You can access WeBWorK through the bCourses site for this class. Look for the WeBWorK entry in the menu along the left side of the page. Logging in via bCourses automatically enrolls you in WeBWorK. Your homework assignments and homework scores are kept in WeBWorK. We will not be using the bCourses gradebook.

To get started in WeBWorK, do Homework Set 0, which is a tutorial on using the system. It has no due date and doesn't count for credit.

For more information you can also consult the WebWork Wiki. Ignore the "Logging into WeBWorK" instructions on the Wiki, as they do not apply when you log in via bCourses.

You can attempt each problem as many times as you like. The first thing to do if you don't get the correct answer right away is to check that what you entered is what you meant. If it is, then double check your calculations for arithmetic mistakes.

If you still have trouble after double checking for mistakes, re-read the problem carefully, to be sure you understood it correctly. Then think again about your strategy for solving the problem. Maybe you need to approach it differently than your first idea.

Grading policy

Homework: 10%
Two midterms: 20% each
Final Exam: 50%

Your lowest midterm exam grade (after conversion to letter grade points) will be replaced by your final exam grade if the latter is higher. This policy allows you to miss one midterm essentially without penalty.

All the online homework assignments count towards your grade, none are dropped. If you add the course after the beginning of the term, the system should automatically give you extended due dates for the earlier assignments. Please contact Professor Haiman if you encounter any problems with this.

Makeup exams will not be given except in extraordinary circumstances. If you are forced by a serious, documented medical or family emergency to miss both midterms or the final exam, contact Professor Haiman to discuss your options.

Missing both midterms or the final exam without a valid excuse will have a strongly negative impact on your grade. **It is your responsibility to make sure you do not have conflicts with exam times.**

The grade of **Incomplete** is given only after discussion with Professor Haiman, in cases where a student has missed the final exam for a valid reason and has passing grades on their other coursework. An Incomplete received under these circumstances is to be completed by taking the final exam with a Math 1B class in the following semester.

Any form of cheating on exams, whether by copying another student's answers, giving or receiving assistance, or using proscribed materials or electronic devices, is strictly forbidden. Cheating may result in a negative score on the affected exam, and possibly in further disciplinary measures.

Grade computation method

I converted raw scores to grade points on a 0-5 scale with A range 4-5, B 3-4 and so on. The grade ranges for exams and homework were:

	Midterm 1	Midterm 2	Final	Homework
A	84-100	79-100	80-100	192-199
B	70-83	57-78.5	62-79.5	175-192
C	48-69	36.5-56.5	39.5-61.5	130-175
D	34-47	26-36	27-39	85-130
F	0-33	0-25.5	0-26.5	0-85

For example, a score of 85 on the final exam would be 4.25 on the 0-5 grade scale.

If your lowest midterm grade (on the 0-5 scale) was lower than your final exam grade, the final exam grade replaced it. I then computed a grade for the course on the 0-5 scale using the weights that were announced: Homework 10%, Midterms 20% each, Final Exam 50%.

The B and C ranges were divided in thirds for + or - grades, e.g., B+ was [3 2/3, 4), B was [3 1/3, 3 2/3), B- was [3, 3 1/3). The A- range was [4, 4 1/3). I consider A+ a special grade for nearly perfect work, so the A+ range was [4.95, 5]. I did not give + or - grades in the D or F ranges.

Links to other resources

CALCULUS.ORG web page with links to many helpful calculus resources

History of calculus page from St. Andrews University, Scotland

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Back to top | Prof. Haiman's home page | Calendar