UCDAVIS MATHEMATICS

Fall Quarter 2016

(version 2016.09.21)

Calculus: Partial Derivatives and Series

Course Information

Course Name:	MAT 021C Sections A01–A06			
Course Webpage:	www.math.ucdavis.edu/∼mtsuruga/teaching/FQ2016_21C.html			
Time/Location:	Lectures:	MWF	10–11AM	YOUNG 198
	Discussions:	A01	T 4–5PM	OLSON 205
		A02	T 6–7PM	OLSON 106
		A03	T 7–9PM	OLSON 106
		A04	T 3–4PM	WELLMN 115
		A05	T 8–9PM	HOAGLD 108
		A06	T 6–7PM	STORER 1322

Instructor:	Mimi Tsuruga	
Contact:	mtsuruga@math.ucdavis.edu	
Office Hours:	W 1–3PM	Location varies

TA information:	Sections	Name	Contact	Calc Room Hours
	A01 A06	Younggyu Lee	yk203	R 2–4 PM
	A02 A03	Wencin Poh	wpoh	MW 1–2 PM
	A04 A05	Yunshen Zhou	yszhou	M 2–4 PM

Course Description

Continuation of course 21B. Sequences, series, tests for convergence, Taylor expansions. Vector algebra, vector calculus, scalar and vector fields. Partial derivitives, total differentials. Applications to maximum and minimum problems in two or more variables. Applications to physical systems. See math department webpage and department's course syllabus for more information.

Prerequisites

Completion of course MAT 16C, 17C, 21B or 21BH; Must have earned a C- or better in course MAT 16C, 17C, 21B or 21BH to enroll.

Class Policies

➢ **READ THIS SYLLABUS!** This syllabus contains all essential information for successful completion of this course. Students enrolled in this course are presumed to have read and agreed to all aspects of the course design and policies as set forth in this syllabus.

- Regularly check the course webpage for updated information and announcements. The syllabus may also change to reflect updated information.
- See the attached Reading Schedule for the course outline. The listed sections from the e-text are expected to have been read before the indicated date.
- There will be no make-up exams. There will be no partial credit on homework problem sets. There will be no curve.
- Students are encouraged and expected to work together on homework problems, study together, and use any resource they can get their hands on including, but not limited to, mathematical software (see Software) and free online videos or courses (such as Khan Academy). HOWEVER, all exams will be closed-book; discussion, sharing of solutions, and use of electronic devices (such as calculators, smart phones, tablets, or laptops) are strictly prohibited during exams.
- The instructor will be available to answer questions and workout problems after lectures or during weekly office hours. The TAs can answer questions during Discussions or during their Calculus Room hours. Also learn about tutoring and advising services provided by various UC Davis programs (see Help & Suggestions).
- The section TAs for this course will not hold office hours in their offices. The TAs will be available for help and consultation during their Calculus Room hours.
- Attendance will not be recorded, except for exams. However, students who attend lectures will have a strong advantage as the lectures will almost always include hints for approaching exams.
- When emailing the instructor or TAs be sure to **include your Section Number and Student ID Number**!

Grading Policy

Homework (10%)

The homework problems are online and can be found on MyMathLab (see Software). There are 10 online homework problem sets and labeled HW1–HW10.

- Online homework problem sets are ALL accessible from Day 1. They may be completed any time **BEFORE** 11:59PM on the indicated due date. They are due on Wednesday nights. See Important Dates calendar for exact due dates.
- Fully complete **any 7 out of 10 problem sets** to receive full credit. That is, the marks for 3 of the 10 problem sets will be ignored. Students will not receive extra credit for completing more than 7 problem sets.
- Each problem set must be completed **IN FULL**. Students can see their score immediately as they work on the online problems. Make sure the problem set is indicated as 100% completed before the due date to receive any credit.
- The problems are typically individualized for each student. However students may—and are strongly encouraged—to work together.

Exams

Midterm 1	**(20%)**	**Friday, October 14**	**YOUNG 198**
Midterm 2	**(30%)**	**Friday, November 4**	**YOUNG 198**
Final	**(40%)**	**Monday, December 5, 8 AM**	**YOUNG 198**

- The midterms are full-period exams. The final exam has been scheduled by the registrar.
- **All solutions must show work!** If the shown work is correct and the final solution is wrong, the problem will be marked as correct. If the shown work is wrong and the final solution is correct, the problem will be marked as incorrect.
- Exams are based on online homework. That is, the exam problems will be some variation of the online homework problems assigned from the previous weeks. (Hint: Take a look at nearby problems in the e-Text.)
- The content of the exams will be cumulative. The problems will be similar to problems found in all previous homework problem sets and exams.
- Each exam will be graded out of 100 points. Some problems may receive partial credit when applicable.
- Graded midterms can be collected during Discussions in the following week. Grades will be posted on Canvas.
- Department policy dictates that all completed mathematics final exams are the property of the Department. Students may look over their exams, but may not keep them.
- Students are expected to work alone. The use of calculators, notes, or books will not be allowed. See UC Davis Code of Academic Conduct.

Extra Credit

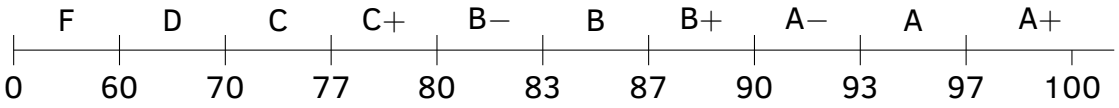
For each exam in this course, students will have an opportunity to hand in Extra Credit problem sets which may add extra points to the proceeding exam.

- The hand-in Extra Credit problem sets can be found on the course webpage. There are 3 hand-in Extra Credit problem sets labeled EC1–EC3. (See Important Dates calendar for due dates.)
- Students **MUST** work in groups of 3-5 students. Groups consisting of only 1 or 2 students are not permitted.
- Students are free to choose their own groups and can change groups during the quarter. Students in different sections may work in the same group. Different groups may (and are encouraged to) work together.
- Exactly one solution set is to be submitted per group.
- Each Extra Credit problem set will contain 3 problems. Groups may select a **maximum of 2** of the 3 problems to solve. If solutions to all 3 problems are submitted, only the first 2 will be graded.

- The solution sets are to be handed in **at the beginning** of the discussion session in the section of the student whose name appears first in the group. The graded solutions will be returned in that same section.
- Each problem can receive a grade of 0, 1, or 2 points. Grades will be posted for each student individually on Canvas.
- All solutions must show work. If the shown work is correct and the final solution is wrong, the problem will be marked as a 2. If the shown work is wrong and the final solution is correct, the problem will be marked as a 0.
- Solutions must be written or printed on (lined or unlined) US letter-sized paper. The Section Number AND Student ID Number of each student in the group must be written on the top right corner of EVERY submitted page. Clearly print the problem number being solved on each page. Do NOT staple pages together.
- Each sheet (front and back) of the solution set may contain the solution and/or work of at most 1 problem. The solution and work for 1 problem may take up more than 1 sheet.
- The graded solutions for EC1 and EC2 will be returned with the midterms. To retrieve EC3, set up an appointment with the instructor up to 2 weeks after the courses grades have been submitted to the registrar; after that date, they will be discarded.

Letter Grades

A curve will only be applied under extreme circumstances and only when requested to do so directly by the department. Non-zero decimals will be rounded up to the nearest integer. See General Catalog for university grade policies.



Software

MyMathLab & e-Text

Register for MyMathLab

Login to MyMathLab

Course ID: **tsuruga66165**

In an effort to reduce overall student costs, this course is participating in the UC Davis Inclusive Access program. All enrolled and waitlisted students have automatic access to the e-Text and an interactive study platform for the required course material at a discounted rate negotiated for the campus.

All students will be provided with an access code to register for MyMathLab, an interactive learning platform embedded with the e-text for the course, Thomas's Calculus Early Transcendentals, Thirteenth Edition. Students should have been sent an email directing them to the Inclusive Access website with a short explanation of the program, along with instructions to register for the course. Students who did not receive such an email should contact inclusiveaccess@ucdavis.edu as soon as possible.
To
Students will have free access for 10 class days (until October 4), after which the access fee of $90.00 will be billed to their student account. Students may opt-out of the digital access during the 10-day period, prior to billing. If they opt out, their online access will be turned off and they will pay nothing. Students who drop the course before the opt out deadline are automatically opted out and will not be charged. Those who drop the course after the first 10 days will have 5 days to request a refund with documentation of the drop.

The $90.00 access fee covers the entire MAT 21 series. Students who registered for access are recognized in all consecutive levels of the series. They will not billed again and do not need to opt out.

IMPORTANT NOTICE

Students are NOT required to purchase digital access for this course!

Students who decide to opt-out of Inclusive Access can still receive full credit for their homework grade if **any 7 of the homework problem sets are 100% completed before October 7**. A pdf version of each of the homework problem sets will be posted on Canvas after their respective due dates so that students who opted out can study for exams.

Math Department Accounts

Students enrolled in this course can create temporary accounts in the mathematics department to use the computers in the computer lab at MSB 2118. Students with accounts will have free access to some mathematical software (such as Maple and Matlab) to be used only in this lab.

Set up your accounts at https://www.math.ucdavis.edu/courses/class-accounts/.
Students are NOT required to set up an account for this course.

Wolfram Mathematica

A special discount is being offered for UC Davis students. Students may purchase a student license for the newly released Wolfram Mathematica v.11 Student Desktop edition for a discounted price of $99 (normally $140).

And if you place your order **before Oct 1**, there will be an additional discount of 15% off of the original price, making it $78!

Instructions:

- Visit https://store.wolfram.com/view/app/mathematica/student .
- Choose a platform.
- Add the product to the Cart.
- Upload a proof of your Student Enrollment (e.g., registration receipt, class schedule)
- Choose an optional Personal License Service, if you want one.
- Enter the promotion code `PD2126` right before checkout.

Students are not required to purchase this software for this course. This license is a perpetual license. The students will be able to use the license as long as they are pursuing a degree.

SageMath

Visit https://cloud.sagemath.com to try SageMath online for free. Sage is easy to learn and may be used to find many of the solutions to the homework problems. Also visit this page to find a calculus tutorial with examples relevant to this course.

Students are NOT required to use Sage in this course.

Help & Suggestions

- ➢ For every hour spent in class, expect to spend (at least!) 2 hours studying.
- ➢ Contrary to popular belief, mathematics is rarely—if ever—worked out in isolation. Ask questions and talk to many different people.
- ➢ The Calculus Room has Teaching Assistants available to answer questions for students taking MAT 21ABCD. Located in the ground floor of the Mathematical Science Building (MSB 1118), the Calculus Room is staffed with 21ABCD TAs from 1–7 PM Monday to Friday.
- ➢ Student Academic Success Center, located on the second floor of Dutton Hall, offers many services for students in mathematics courses. These include workshops for the Math 16 and some classes in the Math 21 series, drop-in tutoring, self-paced programs, an exam file, and classes coordinated with the Math 16 and 21 series for students with special needs.
- ➢ A list of tutors available for hire is maintained by the Student Services Office on the department's website. Some student organizations, such as the Math Café, provide tutoring services. Students also have academic advising services available through the First Resort, the Mathematics Academic Peer Advisor, and academic counselors in their Deans' offices.

Reading Schedule

	M	T	W	R	F
SEP			21 10.1	22	23 10.2
	26 10.3	27	28 10.4	29	30 10.5
OCT	3 10.6	4	5 10.7	6	7 10.8
	10 10.9-10	11	12	13	14
	17 12.1-2	18	19 12.3	20	21 12.4
	24 12.5	25	26 13.1	27	28 13.2
	31	1	2	3	4
NOV	7 14.1	8	9 14.2	10	11
	14 14.3	15	16 14.4	17	18 14.5
	21 14.6	22	23 14.7	24	25
DEC	28 14.8	29	30	1	2
	5				

Important Dates

	M	T	W	R	F
SEP			21	22	23
	26	27	28 HW1 Due	29	30
OCT	3	4 Opt-Out	5 HW2 Due	6	7
	10	11 EC1 Due	12 HW3 Due	13	14 Midterm 1
	17	18	19 HW4 Due	20	21
	24	25	26 HW5 Due	27	28
NOV	31	1 EC2 Due	2 HW6 Due	3	4 Midterm 2
	7	8	9 HW7 Due	10	11 NO CLASS
	14	15	16 HW8 Due	17	18
	21	22	23 HW9 Due	24	25 NO CLASS
DEC	28	29 EC3 Due	30 HW10 Due	1	2
	5 FINAL				