

## Math 20C Calculus & Analytic Geometry for Science and Engineering Winter 2004

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<b>Instructor:</b>	Steven E. Pav
<b>Phone:</b>	858 534 2126 (4-2126)
<b>Email:</b>	SPAV@UCSD.EDU
<b>Office:</b>	5763 Applied Physics & Mathematics Building (APM)
<b>Office Hours:</b>	M 3:00p-3:50p, Tu 1:00p-2:30p, or by appointment
<b>Meeting Times:</b>	MWF 4:00p-4:50p
<b>Room:</b>	2622 York Hall
<b>Textbook:</b>	<i>Calculus, Early Transcendentals, 5<sup>th</sup> Edition</i> , James Stewart. We will cover parts of chapters 10, 12, 13, 14, 15. Stewart's <i>Multivariate Calculus, Early Transcendentals, 5<sup>th</sup> Edition</i> , which is chapters 10–17 of the larger text, is also acceptable.
<b>Prerequisites:</b>	Math 20B
<b>Course Webpage:</b>	<a href="http://scicomp.ucsd.edu/~spav/class/2004W-M20C/">http://scicomp.ucsd.edu/~spav/class/2004W-M20C/</a>
<b>Final Exam:</b>	Tuesday March 16, 3:00p-6:00p

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**Catalogue Description.** *20C. Calculus and Analytic Geometry for Science and Engineering. (4) Vector geometry, vector functions and their derivatives. Partial differentiation. Maxima and minima. Double integration.*

**Course Description.** This is the third course in calculus for students of mathematics, science and engineering. In this course we examine topics of elementary calculus, but from a multidimensional perspective.

**Grading Policy.** Grading will be based upon performance in homeworks, two single hour exams, and a comprehensive final. The final quarter grade is subdivided as follows: Homework: 80 points; Midterm 1: 180 points; Midterm 2: 220 points; Final Exam: 320 points. This gives a total of 800 points. At the beginning of the quarter, I can only make the following guarantee: if you have at least 640 points at the end of the quarter, your final grade will be at least C-. Probably this “acceptable grade divider” will drift downward from 640 as the quarter progresses.

Frequently students are driven to ask for a change in grading policy late in the quarter. To make such a change would be unfair to any student who had already dropped the class thinking they couldn't pass. I expect that *any* grading scheme will be disagreeable to *some* student; the best anyone can hope for is a grading scheme which is agreeable to the majority, and which applies equally to all students. In any case, this is a calculus class, not a game show; there is no “deal-making.” If you get a perfect score on the final exam, I will buy you a candy bar, but you still may not pass the class—the final exam is only worth 40% of the final grade. The point of having midterm exams is to encourage students to review the material some time before 11pm the night before the final.

The dates and times for the midterms and final exam are listed in this syllabus: The first midterm is during class on Monday, January 26, the second is during class on Monday, February 23. The final is Tuesday, March 16 at 3pm. If you have known conflicts with any of these exams, I encourage you to switch to another section of 20C immediately. Legitimate, documented excuses for missing an exam will be dealt with individually.

I plan to have the first midterm exam returned before the end of the fourth week, *i.e.*, before the deadline to drop without a ‘W.’ Likewise, I plan to have the second midterm returned before the deadline to drop with a ‘W.’ The decision to drop the course is a serious one. However, I can

only advise you on how you are doing in this course; I am *not* qualified to advise you on your educational career and know little about the various majors and their requirements. Please consult your academic advisor for these matters.

**Homework.** There will be 10 homework assignments, each worth 10 points. Your lowest *and highest* homework score will be dropped. This minimizes the effect of outliers. Since your lowest homework score will be dropped, no late homework will be tolerated.

Homework is to be handed to the TA at the end of discussion section. I repeat: *no late homework will be tolerated*. Your TA has full discretion in grading the homework; do not irritate your TA by handing in dog-chewed, coffee-stained, unnamed, unstapled homework scribbled in illegible runes on diner napkins. The answers to the homework questions may be found in the back of the book, or in the solutions manuals generally available on the black market. For this reason, unless a homework question is trivial (*i.e.*, no work is required), simply writing the answer to homework questions is not acceptable; you must *show all your work*. A homework consisting of only answers will receive a grade of zero.

It is expected, and encouraged, that students will work together on the homeworks. This saves time (yours, mine, and the TAs'), builds leadership, and encourages cooperation. Each student must submit their own homework, written in their own hand (please no printouts, photocopies or faxes). Since the midterm exams follow the homework closely, it is strongly suggested that students pay careful attention to the homework.

**Getting Help.** I encourage you to attend my office hours, and the office hours of your TA. Students can also get help at the Department's Calculus Lab, located in AP&M 2402, and open weekdays. See (<http://www.math.ucsd.edu/frontdesk/roomschedule/2402.shtml>).

Help is also available from OASIS, which is a tutoring program requiring regular attendance. See ([http://oasis.ucsd.edu/math\\_science.shtml](http://oasis.ucsd.edu/math_science.shtml))

**Calculators.** A TI-85 or -86 calculator, or one less powerful, may be used during the class and during the midterm exams. The TI-89 and -92 are *not* allowed.

**Academic Integrity** Students are expected to adhere to the University's Policy on Integrity of Scholarship, found in the UCSD general catalogue. Minimum punishment for cheating on a midterm exam is a score of zero on that exam.

**Course Webpage.** The course page, (<http://scicomp.ucsd.edu/~spav/class/2004W-M20C/>) will include this syllabus and any updates, general announcements and some pertinent course materials.

### Collected and Possibly Irrelevant World Proverbs to Fill This Space:

*"He who asks is a fool for five minutes; he who does not ask remains a fool forever."*

—Chinese Proverb

*"Water that has been begged for does not quench the thirst."*

—Soga Proverb (Uganda)

*"If you build a bridge, and the bridge falls down, there's no partial credit."*

—Engineering Professor's Credo

*"If you point at the moon, a fool will look at the finger."*

—Sufi proverb

*"No matter how far you have gone on the wrong road, turn back."*

—Turkish proverb

*"A teacher is better than two books."*

—German proverb

**Course Schedule.** The lecture schedule is tentative, but the homework and exam schedules are exact.

week 1	M Jan 05	§12.1
	W Jan 07	§12.2
	Th Jan 08	HW 1 : §12.1 # 2, 6, 7, 10, 13, 17, 22, 27, 29, 35, 41.
	F Jan 09	§12.3
week 2	M Jan 12	§12.4
	W Jan 14	§12.5
	Th Jan 15	HW 2 : §12.2 # 1, 2, 6, 9, 13, 15, 19, 23, 27, 31. §12.3 # 1, 2, 5, 7, 11, 21, 26, 35, 41, 51, 55, 57. §12.4 # 1, 3, 7, 8, 9, 15, 27, 41.
	F Jan 16	§10.1 & 13.1
week 3	M Jan 19	no class
	W Jan 21	§10.2 & 13.2 §12.5 # 1, 3, 7, 10, 11, 13, 17, 19, 23, 27, 30, 54, 65.
	Th Jan 22	HW 3 : §10.1 # 1, 5, 7, 11, 13, 24. §13.1 # 1, 3, 5, 7, 10, 11, 13, 19–24, 40. §13.2 # 1, 3, 5, 7, 9, 15, 16, 19, 21, 25, 33, 37, 44, 49.
	F Jan 23	§10.2 & 13.3
week 4	M Jan 26	exam 1 covering §10.1, 10.2, 12.1–12.5, 13.1–13.3
	W Jan 28	§13.4 §10.2 # 37, 39, 41, 43, 45.
	Th Jan 29	HW 4 : §13.3 # 1, 3, 5. §13.4 # 1, 3, 5, 9, 11, 19.
	F Jan 30	§14.1
week 5	M Feb 02	§14.2
	W Feb 04	§14.3 §14.1 # 2, 6, 7, 9, 11, 14, 15, 23, 25, 30, 37, 29, 40, 41, 53–58, 59, 61.
	Th Feb 05	HW 5 : §14.2 # 5, 7, 11, 12, 13, 19, 27, 28, 31. §14.3 # 13, 17, 29, 35, 37, 45, 46, 47, 49, 53, 57, 67.
	F Feb 06	§14.4

week 6	M Feb 09	§14.5
	W Feb 11	§14.6
	Th Feb 12	HW 6 : §14.4 # 1, 3, 11, 17, 23, 26, 31. §14.5 # 1, 3, 7, 8, 13, 21, 35, 39, 40. §14.6 # 7, 9, 11, 13, 15.
	F Feb 13	§14.7
week 7	M Feb 16	no class
	W Feb 18	§14.7
	Th Feb 19	HW 7 : §14.6 # 21, 25, 27, 31, 37, 55. §14.7 # 1, 5, 7, 11, 13, 27, 29, 37, 41, 48, 51.
	F Feb 20	§14.8
week 8	M Feb 23	exam 2 covering §13.3, 13.4, 14.1-14.8
	W Feb 25	§15.1
	Th Feb 26	HW 8 : §14.8 # 3, 5, 7, 8, 14, 23, 25, 29. §15.1 # 2, 5, 11, 13.
	F Feb 27	§15.2
week 9	M Mar 01	§15.3
	W Mar 03	§15.4
	Th Mar 04	HW 9 : §15.2 # 1, 3, 5, 11, 15, 25, 33. §15.3 # 1, 3, 4, 9, 11, 13, 19, 21, 37, 39, 43, 45, 55. §15.4 # 3, 5, 6, 7, 9, 11, 13, 18, 19, 21, 25, 30.
	F Mar 05	§15.5
week 10	M Mar 08	§15.7
	W Mar 10	§12.7
	Th Mar 11	HW 10 : §15.5 # 3, 5, 7, 8, 11, 12. §15.7 # 3, 5, 7, 12, 17, 25, 33, 37, 47. §12.7 # 3, 5, 9, 13, 15, 19, 23, 29, 31, 33, 38, 50, 55, 65.
	F Mar 12	§15.8
finals	T Mar 16	Final Exam. 3:00p-6:00p