

Mathematics 31 – Calculus II

Claremont McKenna College, Spring 2011

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Office Hours: **TTh 10:00 AM -11:50 AM and by appointment**

The text for this course is *Short Calculus* by Serge Lang. Class is from 11:00 to 11:50 AM in RN 105 every Monday, Wednesday and Friday. Regular attendance is encouraged.

Our book includes exercises at the end of each chapter, which you are strongly encouraged to work for practice, though they will not be collected for a grade. Merely attending class is not enough; in order to pass this class, you will need to read the assigned sections and work the practice problems on your own. Each day, I will give a lecture explaining the concepts and showing examples from that day's section, which you should have already read; then, before the next class, you should work the suggested problems for that day's section and read the next assigned section.

There is no way to learn calculus without doing the problems and reading the sections in the book. On the other hand, if you do the required reading and problems (and at least a few of the practice problems), pay attention in the lectures, and make sure to ask questions when things don't make sense (my office hours are for **your** questions!), you have every reason to expect success in the course.

Grading will be as follows:

- 15%** - weekly take-home assignments
- 15%** - weekly quizzes
- 40%** - two midterms
- 30%** - final exam (**Thursday, May 12 9:00 AM - 12:00 Noon.**)

My grading policy is explained on my website, which you should read carefully. In summary, we will use a 5-point scale for grading problems, designed to ensure uniform and fair grading.

15% of your grade will come from weekly take-home assignments. These will be handed out in class and also posted to my website, in case you need a new copy. Another 15% of your course score will come from your weekly quizzes, given during the last ten minutes of class each Wednesday. We will drop the lowest quiz and lowest homework scores when determining the final grade.

The midterms will have around eight problems plus some bonus problems. The final will be cumulative, will have around sixteen problems plus some bonus problems and will be given in RN 105 on Thursday, May 12 from 9:00 AM to 12:00 Noon. Before each exam, I will post a practice exam and separate solutions to the above-listed website. These practice exams can be helpful in identifying weaknesses in your understanding of the material. However, the fact that a certain type of problem does not show up on the practice exam does **not** mean that a problem of that type will not show up on the actual test. In particular, doing the practice exam is not a substitute for working the practice problems throughout the semester.

Since make-ups will not be given for quizzes and late take-home assignments will not be accepted, we will drop the lowest homework and quiz scores. Make-up tests will be permitted only with a valid reason and should be scheduled ahead of time. Calculators are permitted but are neither required nor necessarily helpful – you cannot simply write a number or formula and expect to receive credit, as your grade is based on your *explanation* of your answer, not just the answer itself. Devices with 3G/4G/WiFi such as iPads, iPods, cell phones, Kindles and laptops cannot be used during exams or quizzes. Cheating in any form will not be tolerated.

You are encouraged to come to my office hours with any questions or concerns you might have; my office hours are there for you. You can also send me questions through email, at **Sam.Nelson@cmc.edu** or via AIM/Y!/FB at **ProfSamNelson**, or via SMS.

Math 31 Lecture Topics, Spring 2011

L1 Limits, Suprema and Infima	L18 Moments
L2 Continuity	L19 Taylor's formula
L3 Indefinite Integrals	L20 Estimate for the Remainder
L4 Area	L21 Taylor's formula for Trig functions
L5 Upper and Lower sums	L22 Taylor's formula for e^x
L6 The Fundamental Theorem	L23 Taylor's formula for $\ln x$
L7 Properties of Integrals	L24 Taylor's formula for Arctangent
L8 Improper Integrals	L25 Binomials
L9 Substitution	L26 Convergent Series
L10 Integration by Parts	L27 Series with positive terms
L11 Trig Integrals	L28 Absolute convergence
L12 Trig Substitution	L29 Power Series
L13 Partial Fractions	L30 Differentiation & Integration of Power Series
L14 Length of Curves	L31 Fourier Series
L15 Polar Coordinates	L32 Separable DEs
L16 Volumes of Revolution	L33 Integrating Factors
L17 Work	L34 First order linear ODEs

Math 31 Approximate Calendar, Spring 2011

January

M	W	F
	19	21
	Intro	L1
24	26	28
L2	L3	L4
31		
L5		

February

M	W	F
	2	4
	L6	L7
7	9	11
L8	L9	L10
14	16	18
L11	L12	L13
21	23	25
L14	L15	Review
28		
Mid 1		

March

M	W	F
	2	4
	L16	L17
7	9	11
L18	L19	L20

March Con't

M	W	F
14	16	18
Break	Break	Break
21	23	25
L21	L22	Break
28	30	
L23	L24	

April

M	W	F
		1
		L25
4	6	8
L26	L27	L28
11	13	15
L29	L30	Review
18	20	22
Mid 2	L31	L32
25	27	29
L33	L34	Review

May

M	W	F
4		
Review		

Final Exam:

Thursday, May 12 9:00 AM - 12:00 Noon