Math 181 Honors Calculus I — Fall 2008

Fundamental concepts of analytic geometry and calculus; functions, graphs, limits, derivatives and integrals. Honors Calculus will emphasize the mathematical proofs that form the logical foundations of calculus while fully covering the practical techniques from the non-honors course needed for science and engineering. Students planning to take Math 182 Honors in Spring are strongly recommended to take Math 181 Honors in Fall.

Course Information
Section H06, 01:00–01:50pm, MTWRF, AB635.
Contact honors program at 784–1455 for call number.

Instructor
Dr Eric Olson
Ansari Business Building AB614
ejolson at unr.edu

Office Hours
MTW 2–3pm and by appointment. If I'm in my office and you don't have an appointment, I can almost always take 15 minutes to answer a question.

Text
Single Variable Calculus: Concepts & Contexts, Third Edition,
James Stewart, Thomson Brook/Cole, 2005.

Supplemental Text
Calculus: Volume I, Second Edition,
Tom M. Apostol, John Wiley & Sons, 1967.

Topics Covered
Chapters 1–5 from the main text and/or chapters 1–5 from the supplemental text. This includes historical background, set theory, axioms of the real numbers, mathematical induction, integral calculus, applications of integration, continuous functions, differential calculus, applications of differential calculus and the fundamental theorem.

Academic Conduct
Bring identification to all exams. Work independently on all exams and quizzes. Behaviors inappropriate to test taking may disturb other students and will be considered cheating. Don't talk or pass notes with other students during an exam. Homework may be discussed freely. Homework turned in for grading must be written by each individual student. If you are unclear as to what constitutes cheating, please consult with me.

Equal Opportunity Statement
The Mathematics and Statistics Department supports providing equal access for students with disabilities. I am available to discuss appropriate academic accommodations that students may require. Please meet with me at your earliest convenience. For more information see `http://www.unr.edu/stsv/slservices/drc/` or contact the Disability Resource Center at Thompson Building, Suite 101, Phone (775) 784–6000.

Grading

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12 Quizzes (drop 2)        10 points each
 2 Exams                   80 points each
 1 Final Exam             100 points
 8 Homework Assignments     5 points each
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                          400 points total
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Calendar

#	Date	Apostle	Stewart	Topic
1	Aug 25	1.1-1.3	Preview	Introduction
2	Aug 26	1.5-1.6		Archimedes' Method
3	Aug 27	2.1-2.4		Set Theory
4	Aug 28			Quiz
5	Aug 29	3.1-3.2,3.4	A	Field and Order Axioms
	Sep 1			Holiday (Labor Day)
6	Sep 2	3.6-3.8		Integers, Rational and Real
7	Sep 3	3.9-3.11		Least Upper Bound
8	Sep 4			Quiz
9	Sep 5	4.1-4.2		Induction
10	Sep 8	4.6, 4.8		Summation Notation
11	Sep 9			Recitation
12	Sep 10	1.1-1.2,1.4	1.1	Functions
13	Sep 11			Quiz
14	Sep 12	1.6,1.8-1.10	5.1-5.2	Area and Step Functions
15	Sep 15	1.12-1.14	5.3	Integral for Step Functions
16	Sep 16			recitation
17	Sep 17	1.16-1.19	6.1	Integral of General Functions
18	Sep 18			Quiz
19	Sep 19	1.20-1.22	2.9	Monotone Functions
12	Sep 22	1.23-1.25	3.1	Integrating x^p
12	Sep 23			recitation
13	Sep 24	1.27		Properties of Integral
13	Sep 25			Quiz
14	Sep 26	2.1-2.3	6.1	Area Between Two Graphs
15	Sep 29	2.5-2.7	1.2,C	Sine and Cosine
15	Sep 30			recitation
16	Oct 1	2.9-2.10	1.7,B,H	Polar Coordinates
16	Oct 2			Quiz
17	Oct 3	2.12	6.2	Calculation of Volume
18	Oct 6	2.14	6.5	Concept of Work
19	Oct 7	2.16	6.4	Average Value
20	Oct 8			review
21	Oct 9			Exam I
22	Oct 10	2.18	4.9	Indefinite Integrals
23	Oct 13	3.1-3.5	2.2-2.3	Limits and Continuity
24	Oct 14			recitation
25	Oct 15	3.7	1.3	Composition of Functions
26	Oct 16			Quiz
27	Oct 17	3.9-3.10	2.4	Intermediate Value Theorem

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      Oct 17                                     Final Date to Drop a Class

28    Oct 20    3.12-3.14      1.6              Inverse Functions
29    Oct 21                                    recitation
30    Oct 22    3.16-3.19                       Extreme Value Theorem
31    Oct 23                                    Quiz
32    Oct 24    4.1-4.5        2.5-2.8          The Derivative

33    Oct 27    4.7-4.9        2.1,2.6          Geometric Interpretation
34    Oct 28                                    recitation
35    Oct 29    4.10-4.12      3.5              The Chain Rule
36    Oct 30                                    Quiz
      Oct 31                                     Holiday (Nevada Day)

37    Nov 3     4.13-4.15      4.2              Finding Maximum Values
38    Nov 4                                     recitation
39    Nov 5     4.16-4.19      4.3-4.4          Curve Sketching
40    Nov 6                                     Quiz
41    Nov 7     4.20-4.21      4.6-4.7          More on Maximum Values

41    Nov 10    5.1-5.5        5.3-5.4          Fundamental Theorem of Calculus
      Nov 11                                    Holiday (Veteran's Day)
42    Nov 12    5.6-5.8        5.5              Integration by Substitution
43    Nov 13                                    Quiz
44    Nov 14    5.9-5.10       5.6              Integration by Parts

45    Nov 17    6.1-6.4                         Logarithms
46    Nov 18    6.5-6.7        3.7              Derivative of Logarithm
47    Nov 19                                    review
48    Nov 20                                    Exam II
49    Nov 21    6.8                             Logarithmic Differentiation

50    Nov 24    6.10           3.8,5.9          Approximation of Logarithms
51    Nov 25                                    recitation
52    Nov 26    6.12-6.16      1.5,3.1          The Exponential Function
      Nov 27                                    Holiday (Thanksgiving Day)
      Nov 28                                    Holiday (Family Day)

53    Dec 1     6.18                            The Hyperbolic Functions
54    Dec 2                                     recitation
55    Dec 3     6.20-6.21      3.6              Derivatives of Inverse Functions
56    Dec 4                                     Quiz
57    Dec 5     6.23-6.24      5.7,G            Integration by Partial Fractions

58    Dec 8                                     review
59    Dec 9                                     review
      Dec 10                                    Holiday (Prep Day)
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Final Exam

Thursday, Dec 11 from 12 noon to 2pm in AB635.