Math 165: Honors Calculus	**Syllabus**	**Fall 1995**
Aug. 23 I2 Introduction, set theory	#1 p.19:4,5,8,9,10, p.21:2,4,5,9,10	
24 I3.2–4 Axioms for real numbers		
25 I3.6–7 Inductive sets, Integers, Rationals	#2 p.35:1–6,9,12 (due 8/30)	
28 I4.1–2 Induction	#3 p.40:3,4,5,6,8,11 (due 8/31)	
30 I4.8 Summation, absolute value, triangle inequality	#4 p.43:1,2	
31 Quiz 1		
Sept. 1 I4.10 Pascal's triangle, binomial theorem	#5 suppl.	
4 1.1–4 Functions, ordinate sets, polynomials	#6 p.56:5,6,8,10,11	
6 1.8–9 Partitions & step functions	#7 p.63:1–4	
7 Quiz 2		
8 1.10,12 Integrals of step functions	#8 p.70:1,2,3,4,6a,11	
11 1.12–13 Properties of integrals of step functions		
13 Sup and inf	#9 read I3.8–11 + suppl.	
14 Quiz 3		
15 1.16–17 Upper & lower integrals		
18 1.20–21 Monotonic functions and integrability	#10 p.83:1-4,10,16,20,21–23,25	
20 1.22–23 Calculation of integrals, $\int x^p dx$	#11 suppl.	
21 Quiz 4		
22 1.24-25 Properties of integrals, polynomials		
25 2.2 Area between curves	#12 p.94:1–7,11,15,17	
27 2.16 Average value of a function	#13 p.119:1–4,11,18a,19a,20a	
28 Exam 1		
29 Go over Exam, Trig Functions		
Oct. 2 2.5–7 Trig functions	#14 p.104:1–5,8,9,14,15	
4 2.18 Integral as function	#15 p.124:1,3,5,7, $\int_0^x [t]dt$	
5 Quiz 5		
6 3.1–2 Limits	#16 suppl.	
9 3.3 Continuity		
11 3.4 More Continuity	#17 p.138:1–5,8–12,15,20–23,32	
12 Quiz 6		
13 3.5 Basic Limit Theorems		
14–22 **Midsemester Break**		
23 3.7 Composite functions	#18 p.142:1–21 (ans. to 20 is 2)	
25 3.9 Bolzano's Theorem		
26 Quiz 7		
27 3.10 Intermediate Value Theorem	#19 p.145:1–6	
30 3.12 Inverse functions	#20 p.149: 1–5 + suppl.	
Nov. 1 3.13–14 Properties of inverse functions		
2 Quiz 8		
3 3.16 Boundedness Theorem, Extreme Value Theorem	#21 suppl.	
6 3.17–18 Small Span Thm, Integrability of cont. fns.	#22 p.155:1–3,6–8	
8 3.19 Mean Value Theorem, Derivatives		
9 Quiz 9		
10 4.1 Derivatives	#23, suppl.	
13 4.1–4 Derivatives	#24 p.167:3–12,16–23,25–38	
15 4.5 Power rule, higher derivatives		
16 Exam 2		
17 4.6–10 Tangent line, chain rule	#25 p.173: 1–5,7,9,14,15	
20 4.11 Implicit derivatives	#26 p.179:1–19odd	
22 4.11 Related rates	#27 p.180:20–24,30–34	
23 Thanksgiving		
27 4.13 Extreme values	#28 p.186:1–10	
29 4.14 Mean Value Theorem for Derivatives		
30 Quiz 10		
Dec. 1 4.17 1st & 2nd derivative tests	#29 p.191:1–14	
4 Convexity	(#30 p.194:1–19odd)	
6 (Extrema problems) Review, evaluations		
Fri. 15 Final Exam, 1:45–3:45		