18.01 | Fall 2006 | Undergraduate

Single Variable Calculus

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Calendar

SES #	TOPICS	KEY DATES
Derivatives		
0	Recitation: graphing	
1	Derivatives, slope, velocity, rate of change Limits, continuity	
2	Trigonometric limits	
3	Derivatives of products, quotients, sine, cosine Chain rule	
4	Higher derivatives	
5	Implicit differentiation, inverses Exponential and log	Problem set 1 due
6	Logarithmic differentiation; hyperbolic functions	
7	Exam 1 review	
8	Exam 1 covering Ses #1-7	
Applications of Differentiation		
9	Linear and quadratic approximations	
10	Curve sketching	
11	Max-min problems	Problem set 2 due
12	Related rates	
13	Newton’s method and other applications Mean value theorem	
14	Inequalities	Problem set 3 due
15	Differentials, antiderivatives	
16	Differential equations, separation of variables	
17	Exam 2 covering Ses #8-16	
Integration		
18	Definite integrals	
19	First fundamental theorem of calculus	Problem set 4 due
20	Second fundamental theorem	
21	Applications to logarithms and geometry	
22	Volumes by disks, shells	Problem set 5 due
23	Work, average value, probability	
24	Numerical integration	

SES #	TOPICS	KEY DATES
25	Exam 3 review	
Techniques of Integration		
26	Trigonometric integrals and substitution	
27	Exam 3 covering Ses #18-24	Problem set 6 due
28	Integration by inverse substitution; completing the square	
29	Partial fractions	
30	Integration by parts, reduction formulae	Problem set 7 due
31	Parametric equations, arclength, surface area	
32	Polar coordinates; area in polar coordinates Exam 4 review	
33	Exam 4 covering Ses #26-32	
34	Indeterminate forms - L'Hôspital's rule	
35	Improper integrals	
36	Infinite series and convergence tests	
37	Taylor's series	Problem set 8 due
38	Final review	
	Final exam	