

18.01 Syllabus – Fall 2009

DIFFERENTIATION

0.	W	Sept. 9	Recitation: Review of Graphing
1.	R	Sept. 10	Derivatives, slope, velocity, rate of change
2.	F	Sept. 11	Limits, continuity, trigonometric limits
3.	T	Sept. 15	Derivatives of products, quotients, sine, cosine
4.	R	Sept. 17	Chain rule, higher derivatives
5.	F	Sept. 18	Implicit differentiation, inverses PS 1 DUE
6.	T	Sept. 22	Exponential and log, logarithmic differentiation
7.	R	Sept. 24	Hyperbolic functions, Review for Exam 1
8.	F	Sept. 25	EXAM 1 (covering lectures 1–7)

APPLICATIONS OF DIFFERENTIATION

9.	T	Sept. 29	Linear and quadratic approximation
10.	R	Oct. 1	Curve sketching
11.	F	Oct. 2	Max-min problems PS 2 DUE
12.	T	Oct. 6	Related rates
13.	R	Oct. 8	Newton's method and other applications
14.	F	Oct. 9	Mean value theorem, inequalities PS 3 DUE
	T	Oct. 13	COLUMBUS DAY SCHEDULE - Monday Recitation
15.	R	Oct. 15	Differentials, antiderivatives
16.	F	Oct. 16	Differential equations, separation of variables PS 4 DUE
17.	T	Oct. 20	EXAM 2 (covering lectures 9–16)

INTEGRATION WITH APPLICATIONS

18.	R	Oct. 22	Definite integrals
19.	F	Oct. 23	First fundamental theorem of calculus
20.	T	Oct. 27	Second fundamental theorem of calculus, defn. of log
21.	R	Oct. 29	Areas between curves, volume by slicing
22.	F	Oct. 30	Volume by disks and shells PS 5 DUE
23.	T	Nov. 3	Work, average value, probability
24.	R	Nov. 5	Numerical integration
25.	F	Nov. 6	Improper integrals, Review for Exam 3 PS 6 DUE
26.	T	Nov. 10	EXAM 3 (covering lectures 18–25)
	W	Nov. 11	VETERAN'S DAY - No recitation

TECHNIQUES OF INTEGRATION

27.	R	Nov. 12	Trigonometric integrals
28.	F	Nov. 13	Integration by inverse substitution, completing the square
29.	T	Nov. 17	Partial fractions
30.	R	Nov. 19	Integration by parts, reduction formulas
31.	F	Nov. 20	Parametric equations, arc length, surface area PS 7 DUE
32.	T	Nov. 24	Polar coordinates, area in polar coordinates
	R	Nov. 26	THANKSGIVING BREAK BEGINS – No lecture Thurs./Fri.
33.	T	Dec. 1	Review for Exam 4 PS 8 DUE
34.	R	Dec. 3	EXAM 4 (covering lectures 27–32)

INFINITE SERIES

35.	F	Dec. 4	Infinite series, convergence tests
36.	T	Dec. 8	Taylor series
37.	R	Dec. 10	More on series, Review for Final Exam
38.	TBA	Dec. 14–18	FINAL EXAM