

20B Syllabus - Calculus

Lecture Schedule based on Stewart's – *Calculus, Early Transcendentals*, 5th Edition

Section	Lectures	Topic
5.1, 5.2 & 5.3	1	Review of The Definite Integral Review of The Fundamental Theorem of Calculus
5.4	1	Indefinite Integrals and "Net Change Theorem"
5.5	1	The Substitution Rule
6.1	1	Areas Between Curves
6.2	1	Volumes
6.5	1	Average Value of a Function
10.3 & 10.4	1	Polar Coordinates; Areas in polar coordinates (no "Arc Length")
App G, Supp 1	3	Complex Numbers; Complex Exponentials
7.1	1	Integration by Parts
7.2, Supp 2	1	Trigonometric Integrals; Integration of Functions which take Complex Values
7.3	1	Trigonometric substitution
Supp 3 & 7.4	1	Partial Fractions; Fundamental Theorem of Algebra
7.4 & Supp 4	0.5	Partial Fractions
7.7	1	Approximate integration
7.8	1	Improper integrals
11.1	1	Sequences: Limits, Convergence & Divergence
11.2	1	Geometric and Harmonic Series
11.3 & .4	1	Integral Test; Comparison Test
11.6	1	Absolute convergence, Ratio and Root Tests
11.8 & .9	1	Power Series, radius of convergence, examples
11.10	1	Taylor Series and remainder estimate
11.10 & 12	1	Applications of Taylor Series and remainder estimate
9.1 & .3	1	Introduction to Differential Equations; Separable Differential Equations
9.5	1	The Logistic Equation

Recommended Calculator: TI-85 or TI-86. At the instructors discretion symbolic manipulation calculators such as TI-89 or TI-92 may be prohibited during exams. For some exams, calculators may not be permitted at all.