The Syllabus for Math 9B

Textbooks: David Guichard: Calculus, Late Transcendentals. This is a free electronic book, available at http://mathdept.ucr.edu/pdf/Guichard-Complete.pdf

Integration
- 7.1 Two Examples
- 7.2 The Fundamental Theorem of Calculus
- 7.3 Some Property of Integrals
- 7.4 Substitution

Application of Integration
- 8.1 Areas between curves
- 8.2 Distance, Velocity, Acceleration
- 8.3 Volume
- 8.4 Average value of a function
- 8.5 Work

Transcendental Function
- 9.1 Inverse function
- 9.2 The natural logarithm
- 9.3 The exponential function
- 9.4 Other bases
- 9.5 Inverse Trigonometric Functions
- 9.6 Hyperbolic Functions

Techniques of Integration
- 10.1 Powers of sine and cosine
- 10.2 Trigonometric Substitutions
- 10.3 Integration by Parts
- 10.4 Rational Functions
- 10.5 Additional exercises

More Applications of Integration
- 11.1 Center of Mass
- 11.2 Kinetic energy; improper integrals
- 11.3 Probability
- 11.4 Arc Length
- 11.5 Surface Area