Math 107H   Checklist of topics covered

Fundamental Theorem of Calculus
- Riemann sums
- Antiderivatives
- Basic integration rules and formulae

Techniques of Integration
- Integration by substitution
- Integration by parts
- Trigonometric substitution
- Trigonometric integrals
- Partial fractions
- Improper integrals
- Numerical Integration

Applications of Integration
- Area between curves
- Volume by slicing
  - Disks and washers
- Volume by cylindrical shells
- Arclength
- Surface area
- Center of mass / centroids
- Work

Sequences and Infinite Series
- Limits of sequences and series
- n-th term test
- Integral test
- Comparison test
- Limit comparision test
- Ratio test
- Alternating series and absolute convergence

Power Series
- Geometric series
- Radius of convergence
- Taylor series and Taylor polynomials
- Error estimates
- New series from old
- Integration and differentiation of power series
- Fourier series

And finally...
- Polar coordinates
- Arclength and area in polar coordinates