

This color = We write the section

This color = Maybe a substantial change to MOOCulus

This color = Probably only a minor change, if any

For Midterm 1:

- 1) Defn of Functions
- 2) What is a limit
- 3) Polynomial Functions
- 4) Rational Functions
- 5) Limit Laws
- 6) (In)determinate forms
- 7) Limits to detect Asymptotes
- 8) Continuity and IVT

For Midterm 2:

- 9) Application of Limits – Velocities / Slopes
- 10) Definition of Derivative – through slopes
- 11) Derivatives as functions
- 12) Rules of differentiation – Power rule/Sum Rule/ Const Multiple Rule
- 13) Product Rule + Quotient Rule
- 14) Chain Rule

For Midterm 3:

- 15) Exponential and Logarithmic Functions
- 16) Rules of Differentiation-  $e^x$  and  $\ln x$
- 17) Higher order Derivatives and graphs
- 18) Trig functions and identities
- 19) Rules of differentiation – Trig functions
- 20) Maximums + Minimums

For Final

- 21) Mean Value Theorem
- 22) Optimization (no trig)
- 23) Optimization (with trig)

Spring Semester  
For Midterm 1

- 1) Review Limits
- 2) Review Derivatives
- 3) Linear Approximation
- 4) Graphing Functions
- 5) Implicit Differentiation
- 6) Logarithmic Differentiation

For Midterm 2

- 7) Inverse Trig Functions
- 8) Derivatives of Inverse functions + Inverse trig functions
- 9) Related Rates (No trig)
- 10) Related Rates (with trig)
- 11) L'Hopital's Rule –  $0/0$  and  $\infty/\infty$  forms
- 12) L'Hopital's Rule – other forms
- 13) Antiderivatives + Basic Diff Equations

For Midterm 3

- 14) Approximate Area under curve
- 15) Definite Integral – Definition
- 16) First Fundamental Theorem of Calculus
- 17) Second Fundamental Theorem of Calculus
- 18) Applications of integrals

For Final

- 19) Substitution