MA141 DELTA: Index of Course Lectures:

Day #1: Chapter 0 (sets; real numbers; properties; distance formula; ellipses)

Day #2: Chapter 0 (ellipses continued; parabolas)

Day #3: Chapter 0 (hyperbolas; inverses)

Day #4: Chapter 0 (functions; incr/decr/conc up/conc down; polynomials; trig)

Day #5: Chapter 0 (logs; exponents; factorial; binomial expansion; parametric cur.)
Chapter 1 (limits)

Day #6: Chapter 1 (discontinuities; average speed vs. instantaneous speed

Day #7: Chapter 1 (slope of secant vs. slope of tangent; epsilon/delta def of limit)

Day #8: Chapter 1 (one-sided limits; two-sided limits; horizontal asymptotes)

Day #9: Chapter 1 (no limit; slant asymptotes; continuity; contin on its domain)

Day #10: Chapter 1 (squeeze theorem; contin of trig functions; IVT)

Day #11: Chapter 1 (IVT for determining roots; instantaneous velocity)

Day #12: Chapter 1 (average velocity; instantaneous velocity)
Chapter 2: (definition of derivative; alternate def of derivative)

Day #13: Chapter 2 (slope of tangent line; vertex of a parabola using derivative)

Day #14: Chapter 2 (continuous vs. differentiable; derivative "does not exist")

Day #15: Chapter 2 (contrapositive statement; review for Test #1)

Day #16: Chapter 2 (after Test #1; derivative rules; product rule; quotient rule)

Day #17: Chapter 2 (power rule; higher order derivatives)

Day #18: Chapter 2 (general power rule; distance-velocity-acceleration)

Day #19: Chapter 2 (normal line; begin derivatives of trig functions)

Day #20: Chapter 2 (correction from Day 19; derivatives of trig)

Day #21: Chapter 2 (chain rule)

Day #22: Chapter 2 (chain rule for parametric equations; deriv. of comp. function)

Day #23: Chapter 2 (chain rule; tangent line error; implicit differentiation)

Day #24: Chapter 2 (implicit differentiation; higher order derivatives with implicit)

Day #25: Chapter 2 (derivative of inverse trig; derivative of general exponential)

Day #26: Chapter 2 (deriv of nat exponential; deriv of log function; gen power rule)

Day #27: Chapter 2 (logarithmic differentiation; limit definition of e)

Day #28: Chapter 2 (general power rule; begin related rates)

Day #29: Chapter 2 (related rates continued)

Day #30: Chapter 2 (finish related rates; more examples; review for Test #2)

Day #31: Chapter 3 (after Test #2; eqn of tan line; linear approx; Newton's Method)

Day #32: Chapter 3 (Newton's Method; IVT; extreme value(s) of functions)

Day #33: Chapter 3 (rel max/min; global max/min; find critical points of polynom)

Day #34: Chapter 3 (critical points of non-polynomial)

Day #35: Chapter 3 (Rolle's Theorem; Mean Value Theorem; begin use of 2nd deriv)

Day #36: Chapter 3 (concavity and point(s) of inflection)

Day #37: Chapter 3 (finish concavity; max/min word problems; optimization)

Day #38: Chapter 3 (more optimization example problems)

Day #39: Chapter 3 (more optimization example problems)

Day #40: Chapter 3 (standard indeterminate forms; L'Hopital's Rule)

Day #41: Chapter 3 (more indeterminate forms)

Day #42: Chapter 3 (more indeterminate forms; differentials; error term)

Day #43: Chapter 3 (more differentials; general antiderivatives; power rule)

Day #44: Chapter 3 (antiderivatives; derivative rules – in reverse)

Day #45: Chapter 3 (antiderivatives – exponentials; sum/diff; trig; rev for Test #3)

Day #46: Chapter 4 (after Test #3; summation; approx area under a curve)

Day #47: Chapter 4 (exact area using Riemann Sums and summation formulas)

Day #48: Chapter 4 (exact area; negative area; area under split-domain function)

Day #49: Chapter 4 (properties of def integrals; Fundamental Thm of Calculus)

Day #50: Chapter 4 (more Fundamental Thm of Calculus; chain rule)

Day #51: Chapter 4 (more FTOC; integration using substitution)

Day #52: Chapter 4 (more integration using substitution)

Day #53: Chapter 4 (more integration using substitution; integration by parts)

Day #54: Chapter 4 (more integration by parts)

Day #55: Chapter 4 (reduction formula; finish integration by parts)

Chapter 5 (area between two curves)

Day #56: Chapter 5 (more area between two curves; type 2 region)

Day #57: Chapter 5 (more type 2 regions; volumes of solids of revolution – disk)

Day #58: Chapter 5 (more volume of solids of rev; washer method)

Day #59: Chapter 5 (volumes by slicing; review for Test #4)

Day #60: Chapter 5 (after Test #4; volumes using cylindrical shells)

Day #61: Chapter 5 (finish cylindrical shells; final exam review)

Day #62: Chapters 1, 2, 3, 4, 5 (final exam review)

Day #63: Chapters 1, 2, 3, 4, 5 (final exam review)