Math 151 Syllabus Spring 2017

Text: Essential Calculus Second Edition by Stewart

Homework Management System: WebAssign Calculator: TI-83 or TI-84

Chapter 1 Functions & limits

1.1 Functions

 1.2 A Catalog of functions

(At most 1.5 hours should be devoted to 1.1 and 1.2. Students who have any difficulty with this material should be strongly directed to either Math 141 or Math 122.)

 1.3 Limit of a function (epsilon/delta definitions page 31-32 are optional)

 1.4 Calculating Limits

 1.5 Continuity

 1.6 Limits involving infinity

Chapter 2 Derivatives

 2.1 Derivatives and Rates of Change

 2.2 The Derivative as a function

 2.3 Basic Differentiation formulas

 2.4 The product & quotient rules

 2.5 The chain rule

 2.6 Implicit Diff.

 2.7 Related Rates

 2.8 Linear Approximation

Chapter 3 Applications of Differentiation

 3.1 Max & Min Values

 3.2 MVT

 3.3 Derivatives & the Shapes of Graphs

 3.4 Curve Sketching

 3.5 Optimization (Word Problems)

 (3.6 Newton’s method. (Optional)

 3.7 Antiderivatives

Chapter 4 Integrals

 4.1 Areas & distance

 Appendix B: Sigma Notation

 4.2 The Definite Integral

 4.3 Evaluating Definite Integrals

 4.4 FTC

 4.5 The substitution rule

**Calculator Guidelines TI-84:**

On departmental finals students are not permitted to use calculators which do symbolic differentiation and integration (for example, the TI-89 or TI 92).

All sections of Math 151 should cover the following calculator operations

Graphing: Y= menu, WINDOW, TRACE, GRAPH, ZOOM menu

Use of the FORMAT and MODE menus

Table Menu: TBLSET, Using TABLE to approximate limits, and finding more digits than the table displays

CALC menu: VALUE, ZERO, MIN, MAX

 VARS menu: using Y-VARS to patch in functions from y= menu

 Finding roots numerically Using CALC → ZERO within graph window

 Finding numerical values of definite integrals on the CALC menu or the MATH menu

 Evaluating Riemann sums using the LIST menu or SEQUENCE MODE

LIST menu Routines:

1. Entering a sequence using the LIST OPPS menu

1. Storing and retrieving sequences
2. Finding the sum of a sequence using the LIST MATH menu