Math 152 Syllabus
Text: Essential Calculus Second Edition by Stewart
Homework Management System: WebAssign
Calculator: TI-84

The chapter sections given below are in Essential Calculus, Second Edition. The suggested lecture hours represent 50 minute units, equivalent to 4 lecture hours/week for 14 weeks=56 lecture hours. 6 lecture hours are reserved for tests & review. All sections of Math 152 should include instruction in the use of the TI-84 graphics calculator. (guidelines below). The calculus committee recommends 3 in-class exams equally spaced in the semester.

Math 152 is using the homework management system, WebAssign. The QC bookstore carries a loose-leaf version of the text, packaged with an access code card for WebAssign. Please tell your students NOT to throw away this card. Students can also use an e-book version of the text at the WebAssign site.

Suggested Review: Section 4.5 integration by substitution from Math 151.

Chapter 5   Inverse Functions   10 hours
          5.1   Inverse Functions
          5.2   Natural Logarithmic Function
          5.3   Natural Exponential function
          5.4   General Logarithmic and Exp functions
          5.5   Exponential growth & decay
          5.6   Inverse Trig Functions

Chapter 6   Techniques of Integration   12 hours
          6.1   Integration by Parts
          6.2   Trig Integrals & Substitutions
          6.3   Partial Fractions
          (6.4   Integration with Tables and CAS optional)
          6.5   Approximate Integration
          5.8   L'Hospital's Rule
          6.6   Improper Integrals

Chapter 7   Applications of Integration   8 hours
          7.1   Area between Curves
          7.2   Volumes
          7.3   Volumes by Cylindrical Shells
          7.4   Arc Length (use TI-84 to evaluate some of these integrals. Don't over-emphasize
                         examples where $(1+(f')^2)$ happens to be a perfect square)
          7.7   Differential Equations

Chapter 8   Series   20 hours
          8.1   Sequences
          8.2   Series
          8.3   Integral & Comparison Tests
          8.4   Other Convergence Tests
          8.5   Power Series
          8.6   Representing functions as Power Series
          8.7   Taylor & Maclaurin Series
          8.8   Applications of Taylor Polynomials

In Chapter 8, students should be familiar with manipulation of power series and the creation of new power series from well known examples. Error estimates using Taylor's remainder formula should be discussed. Care must be taken to leave sufficient time to cover the topics at the end of Chapter 8.

HMS Guidelines

Website: http://webassign.net/

In addition to on line homework, the web site offers an e-book version of our text, a personal study guide for students, and videos of lectures linked to each section of the book. All students will self-enroll in WebAssign.

Students who buy the textbook in the QC Bookstore will receive a printed Access Card, with a code which enables them to enroll in Web Assign. (similar to image below). Instructors should tell students NOT to throw this Access Card away with the packaging.
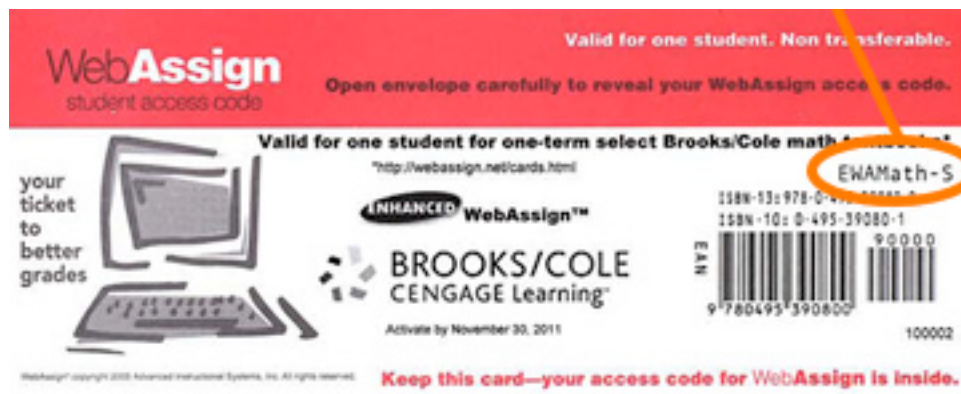
Calculator Guidelines TI-84:

On departmental finals students are not permitted to use calculators which do symbolic differentiation and integration (e.g., the TI-89 or TI-92). In addition to the routines covered in Math 151, the following topics from the List menu should be covered:

1.   entering a sequence using the LIST OPPS menu
2.   Storing and retrieving sequences
3.   Applying arithmetic operations or functions from the Y= menu to sequences
4.   Finding the sum of a stored sequence using the LIST MATH menu

These routines can be taught in the course of one lecture. They are very useful for estimating limits of sequences, for estimating sums of series, and for evaluation of Riemann sums. As always, instructors should take care to also demonstrate examples where numerical estimates are misleading Alternatively, instructors can use SEQUENCE mode routines. Final exams in Math 152 should include some problems that require use of the graphics calculator.