Math 141 Syllabus Spring 2017

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, 3 lecture hours/week for 14 weeks=42 lecture hours. 6 lecture hours are reserved for tests & review. All sections of Math 141 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 141 is using a homework management system, WebAssign which is optional for instructors. see notes below.

### Chapter 1 Functions & limits

- **1.1 Functions**
- **1.2 A Catalog of functions**
  (At most 2 hours should be devoted to 1.1 and 1.2. Students who have any difficulty with this material should be strongly directed to 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**

**9 hours**

### Chapter 2 Derivatives

- **2.1 Derivatives and Rates of Change**
- **2.2 The Derivative as a function**
- **2.3 Basic Differentiation formulas**
  (2.3, 2.4 and 2.5 each require several hours)
- **2.4 The product & quotient rules**
- **2.5 The chain rule**
- **2.6 Implicit Diff.**
- **2.7 Related Rates**
- **2.8 Linear Approximation**

**15 hours**

### 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)

**12 hours**

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**Textbook**

The physical bookstore at Queens College has closed and been replaced with an on-line service: http://www.qc.cuny.edu/StudentLife/facilities/Pages/Bookstore.aspx
This site sells the textbook without the WebAssign HMS. The publisher of our textbook (Cengage) also offers sales direct to students including WebAssign at this dedicated site:

[www.cengagebrain.com/course/1578616](http://www.cengagebrain.com/course/1578616)

At this site students can buy the textbook and web assign in various options: The HMS with an on-line e-book, or with in addition a printed copy mailed to their home address. This site is reportedly much cheaper than the link above from the QC home page.
HMS Guidelines

Website: http://webassign.net/  Instructors can get logins here: 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 self-enroll in WebAssign. Students whose instructors are NOT using WebAssign for homework should register at the Math 141 Master Section to access these resources. To do this they enter the following section and code when they register:

Math 141 Master Section Spring 2017  Class Key: qc 0199 8131

If you are using WebAssign for on-line homework you will need to create a Course in your account for your section. Once you create this section the system will give you a class key, which your students will use to enroll in your section. Later you can find this code in Class View by clicking on “class key settings” in the Class Tools menu.

To create your section: Choose “Create” in the top left menu below “Home”, then “Course”, and select the textbook. Click “enable personal study plan” and the textbook certification. Once you set the start date of the course, students have a 2 week grace period after that date during which they can log in without having paid for access. After you save the course settings, set “How will students be placed on your roster” to self-enrollment.

Calculator Guidelines:

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 141 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 numerically
- Obtaining more digits than the table displays
- CALC menu: VALUE, ZERO, MIN, MAX
- VARS menu: using Y-VARS to patch in functions from the y= menu

Instructors should also demonstrate examples where numerical estimates can be misleading. Final exams in Math 141 should include problems that require use of the graphics calculator. The committee recommends that in class exams should also include some problems that require the calculator.

Role of Theory in Math 141:

All students are expected to know the definition of the derivative at a point, and of continuity at a point. They should be able to state these definitions and use them to solve a problem. They should be able to compute the derivative of simple functions from the definition. They should also understand, and be able to state correctly and use the Intermediate Value Theorem, the Extreme Value Theorem, and the Mean Value Theorem. However students are not required to prove any theorems on departmental finals.