### MTH141 FALL 2011
Calendar and Syllabus

The following calendar gives a timetable for the course. Your class may be slightly behind or ahead at any given time. Some of the problems may be done in class, others as homework. Your instructor will be more specific. You should work out all the problems given below, and others if possible. **NOTE:** notation like "3-9" means that all problems from 3 to 9 are to be done.

<table>
<thead>
<tr>
<th>Week</th>
<th>Sections/Events/Exams</th>
<th>Homework Problems</th>
</tr>
</thead>
</table>
| 1    | **First Day of Class Wed. Sept. 7**  
(1.1) Functions and Change (Handout Section 1.1)  
(1.2) Exponential Functions (Handout Section 1.2)  
(1.3) New Functions From Old (Handout Section 1.3)  
(1.4) Logarithmic Functions | (1.1) 1, 4-7, 9, 12, 16, 17, 20, 21, 27, 40, 44  
(1.2) 5-14, 16, 18, 22, 23, 30, 35, 37  
(1.3) 1, 2, 3, 8, 11, 13, 15, 22, 23, 24, 28-31, 36, 37, 45-48, 55  
(1.4) 5-13, 19, 20, 25, 29, 30, 32, 33, 41, 45, 48, 52 |
| 2    | **Sept. 12**  
(1.5) Trigonometric Functions  
(1.6) Powers, Polynomials, and Rational Functions  
(1.7) Introduction to Continuity  
PreCalc Skills Exam given in class 2nd week on Chapter 1. | (1.5) 14-19, 22-25, 28, 30, 33, 34, 41  
(1.6) 1, 2, 4, 6-13, 22, 26  
(1.7) 1-6, 11, 14, 19, 20, 22, 24 |
| 3    | **Sept. 19**  
(1.8) Limits  
(2.1) How do we measure speed? In class Mathematica Tutorial (Lippitt 205)  
Language of Mathematics Assignment 1 Due Friday Sept. 23 | (1.8) 1, 2, 3, 7, 11, 12, 13, 19, 20, 32, 34, 36-41, 46-48  
(2.1) 1, 8, 9, 11-15, 21, 23, 24, 25-28 |
| 4    | **Sept. 26**  
(2.2) The Derivative at a Point  
(2.3) The Derivative Function  
(2.4) Interpretations of the Derivative | (2.2) 1, 3, 8, 9, 10-13, 22, 24, 32-35, 38-47  
(2.3) 1, 3, 7, 9, 11, 13, 15, 18, 19, 21, 29, 31, 33, 40, 41  
(2.4) 1-4, 6, 9, 11, 18 |
| 5    | **Oct. 3**  
(2.5) The Second Derivative  
(2.6) Differentiability  
(3.1) Powers and Polynomials  
Language of Mathematics Assignment 2 Due Friday Oct. 7 | (2.5) 1, 2, 3, 7-12, 14, 18, 21, 27, 29, 31  
(2.6) 1-4, 9, 12  
(3.1) 6-47, 48-53, 55 |
| 6    | **Oct. 10**  
(No classes on Mon. Oct. 10.)  
**Mon. classes meet Wed. Oct. 12**  
(3.2) The Exponential Function  
(3.3) The Product and Quotient Rules  
**EXAM 1 (Limits, Chapter 2)** 7pm-8:30pm Thurs. Oct. 13 Chafee 271 | (3.2) 1-26, 41  
(3.3) 3-30, 31, 32, 40-42, 45, 56 |
| 7    | **Oct. 17**  
(3.4) The Chain Rule  
(3.5) The Trigonometric Functions  
(3.6) The Chain Rule and Inverse Functions  
**Mathematica Assignment 1 Due by 11:55pm Friday Oct. 21** | (3.4) 1-50, 51-54, 59, 60, 63, 69  
(3.5) 2-39, 40, 53  
(3.6) 1-33, 34-37, 40, 43, 54 |
| 8    | **Oct. 24**  
(3.7) Implicit Functions  
(3.8) Hyperbolic Functions  
(3.9) Linear Approximation and the Derivative  
**Language of Mathematics Assignment 3 Due Friday Oct. 28** | (3.7) 1-18, 19, 21, 23, 25, 27-30  
(3.8) 1-11  
(3.9) 1-6, 10, 11, 13, 14, 16, 17, 34 |
| 9    | **Oct. 31**  
(4.1) Using First and Second Derivatives  
(4.2) Optimization  
(4.4) Optimization, Geometry, and Modeling  
**Mathematica Assignment 2 Due by 11:55pm Friday Nov. 18** | (4.1) 1-8, 13, 18-20, 29, 42  
(4.2) 5-12, 17, 18, 20, 25, 30  
(4.4) 1, 3, 17, 18, 20-23, 28-30, 32, 34, 37, 38 |
| 10   | **Nov. 7**  
(4.6) Rates and Related Rates  
(4.7) L'Hospital's Rule, Growth, and Dominance  
**EXAM 2 Chapter 3, 4.1, 4.2 and 4.4** 7pm-8:30pm Tues. Nov. 8 Chafee 271 | (4.6) 4, 7, 10, 31, 34-40  
(4.7) 5, 6, 16-21, 22-31, 36, 37, 38 |
| 11   | **Nov. 14**  
(4.8) Parametric Equations  
(5.1) How Do We Measure Distance Traveled?  
**Mathematica Assignment 2 Due by 11:55pm Friday Nov. 18** | (4.8) 5, 7, 11, 16, 19, 20, 23, 24, 29, 30, 35  
(5.1) 2, 3, 6-8, 13, 14, 17, 18, 22 |
| 12   | **Nov. 21**  
(5.2) The Definite Integral  
(5.3) The Fundamental Theorem and Interpretations  
**Language of Mathematics Assignment 4 Due Wed. Nov. 23**  
(No classes Thanksgiving Break Nov. 24 – Nov. 25) | (5.2) 2-5, 8, 9, 14-16, 20, 21, 25, 31, 32  
(5.3) 4-7, 9-12, 42 |
| 13   | **Nov. 28**  
(5.4) Theorems About Definite Integrals  
(6.1) Antiderivatives Graphically and Numerically  
**EXAM 3 4.6, 4.7, 4.8 5.1** 7pm-8:30pm Thurs. Dec. 1 Edwards Aud. | (5.4) 2, 3, 4-17, 21, 22, 26, 28-30  
(6.1) 1-4, 6-8, 15, 21, 22, 24 |
| 14   | **Dec. 5**  
(6.2) Constructing Antiderivatives Analytically  
(6.4) The Second Fundamental Theorem of Calculus  
**Language of Mathematics Assignment 5 Due Friday Dec. 9**  
**Mathematica Skills Exam given in class on the last day** | (6.2) 1-63, 65, 66, 68, 71  
(6.4) 5-11, 24, 29-32 |