

## 231 Syllabus

Fall 2002

| Day | Date | Sxn | Topic/Homework   |
|-----|------|-----|--|
| 1-M | 8/26 | 0.1 | Numbers and Sets<br>0, 3, 5, 7, 16, 24, 30, 33, 37, 42, 45, 50, 53, 56, 60, 67, 68, 74, 83, 89, 92.                        |
| 1-W | 8/28 | 0.2 | Equations<br>0, 11, 12, 14, 17, 19, 20, 25, 33, 37, 40, 45, 49, 51, 56, 63, 66, 70, 75, 81, 83.                            |
| 1-R | 8/29 | -   | <b>Diagnostic Quiz</b>   |
|     |      | 0.3 | Inequalities<br>0, 1, 5, 7, 10, 13, 16, 18, 19, 24, 33, 35, 39, 40, 46, 53, 60, 61, 68, 72, 79.                            |
| 1-F | 8/30 | 0.4 | Logic<br>0, 2, 4, 6, 16, 17, 18, 27, 30, 33, 51, 62, 63, 64, 66, 69, 73, 74, 76, 81, 85, 87, 90.                           |
| 2-M | 9/2  | 0.5 | Proofs<br>0, 2, 5, 7, 9, 13, 16, 19, 22, 23, 24, 26, 29, 31, 35, 46, 48, 49.   |
| 2-W | 9/4  | -   | Problems Day   |
| 2-R | 9/5  | -   | <b>Quiz 1</b> (0.1, 0.2, 0.3, 0.4, 0.5)  |
|     |      | 1.1 | What is a Function?<br>0, 1, 3, 5, 7, 12, 16, 21, 22, 23, 24, 25, 27, 29, 30, 31, 33, 35, 36, 40.                          |
| 2-F | 9/6  | 1.2 | Graphs of Functions<br>0, 2, 4, 5, 6, 7, 9, 10, 11, 12, 13, 17, 19, 25, 26, 28, 31, 33, 35, 38.                            |
| 3-M | 9/9  | 1.3 | Linear Functions<br>0, 1, 3, 4, 8, 10, 11, 12, 13, 17, 19, 23, 24, 28, 30, 31, 37, 38, 39, 41, 44, 46.                     |
| 3-W | 9/11 | -   | Problems Day   |
| 3-R | 9/12 | -   | <b>Quiz 2</b> (1.1, 1.2, 1.3)  |
|     |      | 1.4 | A Basic Library of Functions<br>0, 2, 6, 7, 8, 12, 14, 16, 20, 22, 24, 27, 29, 30, 32, 34, 40, 42, 44, 46, 48, 49, 50, 51. |
| 3-F | 9/13 | 1.5 | Combinations of Functions<br>0, 7, 8, 10, 14, 21, 32, 36, 38, 39, 41, 43, 55, 68, 75, 81, 87, 90, 98, 103, 109, 111, 112.  |
| 4-M | 9/16 | 1.6 | Transformations and Symmetry<br>0, 4, 6, 12, 14, 15, 19, 31, 33, 34, 35, 43, 48, 57, 60, 62, 68, 73, 74, 75, 77, 79, 80.   |
| 4-W | 9/18 | -   | Problems Day   |
| 4-R | 9/19 | -   | <b>Quiz 3</b> (1.4, 1.5, 1.6)  |
|     |      | 1.7 | Inverse Functions<br>0, 1, 4, 6, 7, 8, 10, 14, 16, 18, 22, 24, 26, 29, 32, 33, 34, 38, 42, 43, 46.                         |
| 4-F | 9/20 | 2.1 | Intuitive Notion of Limit<br>0, 3, 6, 9, 12, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 27, 29, 32, 36.                       |
| 5-M | 9/23 | 2.2 | Formal Definition of Limit<br>0, 1, 2, 3, 7, 9, 11, 15, 17, 20, 21, 24, 30, 33, 38, 40, 52, 53, 56, 57, 59.                |
| 5-W | 9/25 | -   | Problems Day   |
| 5-R | 9/26 | -   | <b>Quiz 4</b> (1.7, 2.1, 2.2)  |
|     |      | 2.3 | Delta-Epsilon Proofs<br>0, 1, 2, 3, 5, 9, 11, 15, 16, 20, 24, 26, 28, 29, 31, 33, 38.                                      |
| 5-F | 9/27 | 2.4 | Limit Rules<br>0, 4, 10, 13, 14, 16, 19, 22, 33, 35, 37, 38, 40, 41, 42, 43, 47, 50, 51, 53, 56.                           |

## 231 Syllabus

Fall 2002

| Day  | Date  | Sxn | Topic/Homework   |
|------|-------|-----|--|
| 6-M  | 9/30  | 2.5 | Calculating Limits<br>0, 1, 2, 3, 6, 7, 8, 9, 11, 13, 14, 18, 21, 24, 25, 30, 36, 38, 40, 41, 43, 45.  |
| 6-W  | 10/2  | -   | Review for Test I  |
| 6-R  | 10/3  | -   | <b>TEST I</b> (0.1–2.5)  |
| 6-F  | 10/4  | 2.6 | Continuity<br>0, 3, 4, 6, 8, 9, 13, 15, 22, 25, 27, 28, 32, 27, 38, 39, 42, 43, 47, 48, 52, 54, 57, 58, 63.                                  |
| 7-M  | 10/7  | 2.7 | Two Theorems about Continuous Functions<br>0, 2, 3, 6, 8, 9, 14, 15, 16, 17, 18, 19, 24, 26, 27, 33, 35, 37, 38, 44, 46, 50, 52.             |
| 7-W  | 10/9  | -   | Problems Day   |
| 7-R  | 10/10 | -   | <b>Quiz 5</b> (2.6, 2.7)   |
|      |       | 3.1 | Tangent Lines and the Derivative at a Point<br>0, 8, 11, 12, 16, 17, 23, 29, 35, 40, 43, 47, 51, 55, 60, 64, 69, 72, 75, 77, 83, 87, 92, 94. |
| 7-F  | 10/11 | 3.2 | The Derivative as an Instantaneous Rate of Change<br>0, 5, 6, 7, 8, 9, 10, 11, 12, 19, 20, 22, 28, 30, 32, 33, 34, 35.                       |
| 8-M  | 10/14 | 3.3 | Differtiability<br>0, 2, 3, 5, 6, 7, 8, 11, 13, 14, 17, 21, 23, 24, 25, 30, 33, 34, 35, 36.  |
| 8-W  | 10/16 | -   | Problems Day   |
| 8-R  | 10/17 | -   | <b>Quiz 6</b> (3.1, 3.2, 3.3)  |
|      |       | 3.4 | The Derivative as a Function<br>0, 2, 5, 8, 12, 13, 15, 22, 27, 31, 34, 37, 40, 46, 49, 52, 54, 58, 62, 63, 64, 68, 69, 70.                  |
| 8-F  | 10/18 | -   | <b>Fall Break</b>  |
| 9-M  | 10/21 | 3.5 | Basic Differentiation Rules<br>0, 5, 10, 17, 18, 22, 23, 25, 29, 33, 39, 40, 46, 48, 53, 58, 62, 65, 68, 71, 73, 74, 79, 80.                 |
| 9-W  | 10/23 | -   | Problems Day   |
| 9-R  | 10/24 | -   | <b>Quiz 7</b> (3.4, 3.5)   |
|      |       | 3.6 | Three Theorems about Tangent Lines<br>0, 4, 7, 11, 16, 17, 18, 21, 24, 27, 28, 30, 34, 39, 41, 44, 47, 50, 54, 57, 58, 63, 65, 67.           |
| 9-F  | 10/25 | 3.7 | The First Derivative and Function Behavior<br>0, 1, 7, 9, 11, 14, 17, 19, 20, 21, 24, 27, 28, 30, 33, 35, 40, 42, 44, 46.                    |
| 10-M | 10/28 | 3.8 | The Second Derivative and Function Behavior<br>0, 2, 5, 11, 14, 18, 21, 25, 30, 34, 39, 42, 44, 47, 48, 54, 58, 59, 65, 66, 70, 72, 73, 76.  |
| 10-W | 10/30 | -   | Problems Day   |
| 10-R | 10/31 | -   | <b>Quiz 8</b> (3.6, 3.7, 3.8)  |
|      |       | 4.1 | The Algebra of Power Functions<br>0, 3, 7, 12, 13, 15, 19, 22, 39, 43, 48, 51, 56, 58, 62, 64, 69, 73, 84, 86, 88, 91, 93, 97.               |
| 10-F | 11/1  | 4.2 | Limits of Power Functions<br>0, 2, 4, 8, 11, 15, 18, 20, 25, 26, 24, 29, 36, 43, 51, 52, 54, 57, 59, 61, 65.                                 |

## 231 Syllabus

Fall 2002

| Day  | Date  | Sxn | Topic/Homework   |
|------|-------|-----|--|
| 11-M | 11/4  | 4.3 | Derivatives of Power Functions<br>0, 1, 3, 4, 7, 11, 13, 14, 15, 20, 21, 24, 32, 38, 43, 47, 49, 52, 59, 63, 65, 71, 74.                   |
| 11-W | 11/6  | -   | Problems Day   |
| 11-R | 11/7  | -   | <b>Quiz 9</b> (4.1, 4.2, 4.3)  |
|      |       | 4.4 | Graphs of Power Functions with Integer Powers<br>0, 3, 4, 8, 9, 11, 14, 16, 18, 19, 24, 30, 32, 36, 37, 40, 43, 45, 48, 50, 61, 67.        |
| 11-F | 11/8  | 4.5 | Graphs of Power Functions with Rational Powers<br>0, 2, 5, 10, 11, 12, 14, 20, 26, 31, 34, 40, 43, 47, 48, 52, 54, 57, 59, 60, 64, 67, 72. |
| 12-M | 11/11 | 5.1 | The Algebra of Polynomial Functions<br>0, 8, 10, 11, 21, 23, 28, 33, 42, 43, 46, 47, 52, 53, 59, 65, 71, 75, 78, 81, 84, 90, 95, 98.       |
| 12-W | 11/13 | -   | Review for Test II   |
| 12-R | 11/14 | -   | <b>TEST II</b> (2.6–5.1)   |
| 12-F | 11/15 | 5.2 | Limits and Derivatives of Polynomial Functions<br>0, 2, 6, 10, 14, 15, 16, 18, 20, 24, 25, 31, 35, 41, 43, 50, 51, 55, 58, 66, 68, 70.     |
| 13-M | 11/18 | 5.3 | Graphing Polynomial Functions<br>0, 1, 3, 8, 9, 12, 16, 19, 24, 27, 33, 34, 42, 46, 48, 49, 51, 53, 56, 60, 61, 63.                        |
| 13-W | 11/20 | -   | Problems Day   |
| 13-R | 11/21 | -   | <b>Quiz 10</b> (5.2, 5.3)  |
|      |       | 5.4 | Optimization with Polynomial Functions<br>0, 2, 6, 7, 9, 11, 14, 16, 19, 22, 25, 28, 29, 31, 32, 34, 35, 38, 39.                           |
| 13-F | 11/22 | 6.1 | The Algebra of Rational Functions<br>0, , 4, 10, 14, 15, 17, 20, 21, 23, 28, 29, 31, 34, 35, 42, 43, 47, 52, 55, 57.                       |
| 14-M | 11/25 | 6.2 | Limits and Asymptotes of Rational Functions<br>0, 4, 6, 12, 13, 14, 15, 19, 24, 25, 30, 36, 37, 38, 41, 42, 43, 46, 52, 56, 58.            |
| 14-W | 11/27 | -   | <b>Thanksgiving Break</b>  |
| 14-R | 11/28 | -   | <b>Thanksgiving Break</b>  |
| 14-F | 11/29 | -   | <b>Thanksgiving Break</b>  |
| 15-M | 12/2  | 6.3 | Derivatives of Rational Functions<br>0, 1, 2, 4, 5, 6, 7, 11, 12, 15, 20, 21, 26, 30, 32, 34, 39, 41, 42, 46, 50, 52.                      |
| 15-W | 12/4  | 6.4 | Graphs of Rational Functions<br>0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 13, 18, 19, 25, 26, 27, 33, 34, 35, 37, 39.                              |
| 15-R | 12/5  | -   | <b>Quiz 11</b> (5.4, 6.1, 6.2, 6.3, 6.4)   |
|      |       | -   | Problems Day   |
| 15-F | 12/6  | -   | Last Day (mandatory attendance)  |

**Final Exam:** Tuesday, December 10, 10:30–12:30 p.m.  
or Wednesday, December 11, 8:00–10:00 a.m.