

## Math 155 - Homework Assignments and Course Outline



Spring 2012 - Dr. Nakamura

| Chapter | Section | Title  | Homework Assignments  |
|---------|---------|--|---|
| 4       | 4.5     | Integration by Substitution                            | 1-85 EOO (Every Other Odd), 103, 105  |
| 5       | 5.4     | Exponential Functions: Differentiation and Integration | 3, 7, 13, 15, 39-61 odd, 79, 81, 85, 99- 125 EOO, 131                       |
|         | 5.6     | Inverse Trigonometric Functions: Differentiation       | 7, 9, 19, 21, 23, 25, 41, 49, 61, 63, 73                                    |
|         | 5.7     | Inverse Trigonometric Functions: Integration           | 1-53 EOO  |
| 8       | 8.1     | Basic Integration Rules                                | 5-51 EOO, 53, 73  |
|         | 8.2     | Integration by Parts                                   | 11-43 EOO, 49-65 EOO, 67,73,99  |
|         | 8.3     | Trigonometric Integrals                                | 5, 7, 9, 11, 13, 15, 17, 25, 27, 29, 31, 33, 35, 37, 39, 41, 67, 71, 91, 93 |
|         | 8.4     | Trigonometric Substitution                             | 7, 11, 15, 21-45 odd, 47, 51,   |
|         | 8.5     | Partial Fractions                                      | 7, 9, 11, 13, 15, 17, 19, 21, 25, 29, 31, 41, 51                            |
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|               | 8.7 | Indeterminate Forms and L'Hôpital's Rule    | 5-61 EOO   |
|               | 8.8 | Improper Integrals                          | 9, 11, 13, 15, 19, 21, 23, 29, 31, 35, 37, 39, 41, 43, 45, 47, 49, 51, 55, 61, 77                                |
| <b>Exam 1</b> |     |   |  |
| 9             | 9.1 | Sequences                                   | 1, 5, 9, 13, 17, 21, 23, 27, 31, 33, 35, 39, 43, 47, 49, 51, 55, 59, 61, 63, 69, 73, 77, 81, 89, 93, 97, 99, 116 |
|               | 9.2 | Series and Convergence                      | 1, 5, 11, 15, 19, 23, 25, 29, 31, 37-51 odd, 59-75 odd, 83, 85   |
|               | 9.3 | The Integral Test and p-Series              | 1-23 odd, 31, 37, 57   |
|               | 9.4 | Comparison of Series                        | 3-23 odd, 29-35 odd  |
|               | 9.5 | Alternating Series                          | 11-31 odd, 37, 39, 47, 51-69 odd, 87, 89, 91, 93   |
|               | 9.6 | The Ratio and Root Tests                    | 13-31 odd, 35-65 EOO, 85, 87, 91   |
| <b>Exam 2</b> |     |   |  |
|               | 9.7 | Taylor Polynomials and Approximations       | 13-29 EOO  |
|               | 9.8 | Power Series                                | 1-29 odd, 45, 47   |
|               | 9.9 | Representation of Functions by Power Series | 5-15 odd   |
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|---------------|------|---|---|
|               | 9.10 | Taylor and Maclaurin Series                 | 1, 3, 5, 7, 9, 17, 19, 21, 25, 27, 29, 31, 33, 35                           |
| 10            | 10.1 | Conics and Calculus                         | 1-19 odd, 29-37 odd, 41, 45, 49, 51, 53, 55, 57, 61, 67-75 odd              |
|               | 10.2 | Plane Curves and Parametric Equations       | 3-31 odd  |
| <b>Exam 3</b> |      |   |   |
|               | 10.3 | Parametric Equations and Calculus           | 1-13 odd, 21, 23, 27-35 odd, 49, 51   |
|               | 10.4 | Polar Coordinates and Polar Graphs          | 1, 3, 11, 13, 15, 27-45 odd, 59, 63, 65, 85, 87, 89                         |
|               | 10.5 | Area and Arc Length in Polar Coordinates    | 1-11 odd, 17, 19, 21, 25-33 odd   |
|               | 10.6 | Polar Equations of Conics and Kepler's Laws | 7, 8, 9, 10, 11, 12, 15, 19, 21, 23<br>(only sketch and identify the graph) |
| 6             | 6.3  | Separation of Variables                     | 1-13 odd  |