List of topics to be covered in Atkinson's Math 1102

By mastering the suggested practice problems, you will master the core mechanics of the course. Anecdotally, students who work hard on practice problems tend to do well on the exams.

Section	Practice problems
6.1: Areas between curves	5-32
6.2: Volumes	1-36, 41, 49-61 (1-36, 43, 47-59 7th edition)
6.3: Volumes by cylindrical shells	5-26, 29-32, 37-42
6.5: Average value of a function	1-10, 13
7.1: Integration by parts	3-38, 57-60 (3-42, 61-63 7th)
7.2: Trigonometric integrals	1-49
7.3: Trigonometric substitution	1-30
7.4: Integration of rational functions by partial fractions	1-50 (skip around)
7.5: Strategy for integration	Practice integrals from this section
7.7: Approximate integration	1, 3, 7-18
7.8: Improper integrals	5-40, 49-54
8.1: Arc length	7-18
8.2: Area of a surface of revolution	5-16
8.3-4: Applications	21-35
8.5: Probability	3-8, 13
11.1: Sequences	9-14, 17-46, 47-53, 61-66 (7th ed: 13-18, 23-56, 57-63, 72-78)
11.2: Series	1, 9, 11-51 (7th: 1, 15, 17-48, 51-63)
11.3: The integral test and estimates of sums	3-30, 33, 36 (7th: 3-26, 29-32, 37, 40)
11.4: The comparison tests	3-32
11.5: Alternating series	2-20, 23-26, 32-34
11.6: Absolute convergence and the ratio and root tests	2-28, 31 (7th: 2-30, 35)
11.7: Strategy for testing series	Practice as many as you can
11.8: Power series	3-28, 29, 30
11.9: Representations of functions as power series	3-13, 15-26
11.10: Taylor and Maclaurin series	5-10, 13-20, 25-38, 47-50
11.11: Applications of Taylor polynomials	3-10, 13-22
9.1: Modeling with differential equations	1-6, 9, 11, 12
9.2: Direction fields and Euler's method	1-14, 19, 23
9.3: Separable differential equations	1-20, 29-32, (6th: 41, 7th 45), (6th 43, 7th 47)
9.5: Linear equations	1-20, 33, 34
9.4+6: Models for population growth and predator-prey systems	9.4: 1-8, 9.6: 1-6
10.1: Curves defined by parametric equations	1-16, 24, 28
10.2: Calculus with parametric curves	1-6, 17-20, 27-30, 37-44, 48, 57-61
10.3: Polar coordinates	1-46, (6th: 56,57-68, 7th: 54, 55-64)
10.4: Areas and lengths in polar coordinates	1-12, 17-21, 23-34, 37-42, 45-48