# Math 1350 Course Syllabus

Mathematical Reasoning for Elementary Teachers by Long, DeTemple, and Millman (Fifth Edition)

| **Required Sections** | | **Suggested Homework Exercises** |
|---|---|---|
| §1.1 | An Introduction to Problem Solving | §1.1 1, 2, 4, 5, 6, 7, 9-14 all |
| §1.2 | Pólya's Problem-Solving Principles | §1.2 1, 3-9 all, 11, 12, 14-18 all, 22 |
| §1.3 | More Problem-Solving Strategies | §1.3 1-7 all, 10-13 all, 15, 16, 19, 23, 24 |
| §1.4 | Algebra as a Problem-Solving Strategy | §1.4 1-7 all, 12, 13, 14, 16, 20, 22-25 all, 28, 29 |
| §1.5 | Additional Problem-Solving Strategies | §1.5 1-9 all, 11, 12, 17, 22, 23 |
| §1.6 | Reasoning Mathematically | §1.6 1, 2, 3, 5, 9, 12, 17, 18 |
| §2.1 | Sets and Operations on Sets | §2.1 1-15 all, 17, 18, 23, 27, 28, 29 |
| §2.2 | Sets, Counting, and the Whole Numbers | §2.2 2, 3, 4, 6-11 all, 13, 14, 15, 22, 23, 25-28 all, 35-38 all, 40, 41 |
| §2.3 | Addition and Subtraction of Whole Numbers | §2.3 1-4 all, 7-10 all, 13, 15, 16, 19, 24, 25, 26, 40-43 all, 45 |
| §2.4 | Multiplication and Division of Whole Numbers | §2.4 1, 2, 4-11 all, 13, 14, 16, 20-23 all, 28, 29, 31, 39, 40, 42 |
| §3.2 | Non-decimal Positional System | §3.2 1-7 all, 9-14 all, 16, 26, 27 |
| §3.1 | Numeration Systems Past and Present | §3.1 1-14 all, 16-22 all, 24-31 all |
| §3.3 | Algorithms for Adding and Subtracting Whole Numbers | §3.3 1, 2, 4-8 all, 12, 18, 19, 24, 29-36 all, 39, 40 |
| §3.4 | Algorithms for Multiplication and Division of Whole Numbers | §3.4 3, 5, 7, 10, 17, 18, 21, 23, 24, 35-38 all |
| §3.5 | Mental Arithmetic and Estimating | §3.5 1-11 all, 28-32 all |
| §4.1 | Divisibility of Natural Numbers | §4.1 1, 2, 3, 6, 8-14 all, 16, 21, 35-40 all |
| §4.2 | Tests for Divisibility | §4.2 1, 2, 6-12 all, 14, 15, 16, 23, 24, 26-29 all |
| §4.3 | Greatest Common Divisors and Least Common Multiples | §4.3 1-4 all, 6-11 all, 14, 15, 17, 18, 19, 22-26 all, 31-34 all |
| §5.1 | Representation of Integers | §5.1 1, 2, 7-18 all, 20, 21, 22, 27, 28-32 all |
| §5.2 | Addition and Subtraction of Integers | §5.2 1, 3-13 all, 15, 17-23 all, 29, 30, 36, 37, 42-45 all, 47 |
| §5.3 | Multiplication and Division of Integers | §5.3 1, 2, 5, 9, 10, 19, 20, 23, 25 |
| §5.4 | Clock Arithmetic | §5.4 1-6 all, 11, 12, 17, 27, 30, 31, 32 |
| §4.4 | Codes and Credit Card Numbers: Connections to Number Theory | §4.4 1, 5, 6, 7, 9, 10, 11, 15, 17, 18 |
| §6.1 | The Basic Concepts of Fractions and Rational Numbers | §6.1 1-18 all, 20-23 all, 25, 26, 28-30 all, 33, 36, 39-46 all |
| §6.2 | Addition and Subtraction of Fractions | §6.2 1, 4-10 all, 12, 15-18 all, 21, 22, 26, 28, 31, 32 ***(for problems 21 and 22 first read Egyptian highlight p.371)*** |
| §6.3 | Multiplication and Division of Fractions | §6.3 3-15 all, 21, 26-33 all, 35-38 all |
| §6.4 | The Rational-Number System | §6.4 1-11all, 14-19 all, 24, 25, 26, 2834, 36, 41-46 all |
| §7.1 | Decimals | §7.1 1, 2, 3, 5-10 all, 15-20 all, 31, 32, 35 |
| §7.2 | Computations with Decimals | §7.2 1, 2, 4, 5, 6, 11, 12, 18, 19, 24-27 all, 32-39 all |
| §7.3 | Ratio and proportion | §7.3 1-8 all, 12, 25-28 all, 31-35 all |
| §7.4 | Percent | §7.4 1-6 all, 8-13 all, 15-22 all, 37, 38 |