References:

[1] Discrete Mathematics and Its Applications 7th Ed., Kenneth H. Rosen

[2] Introduction to Cryptography with Coding Theory 2nd Ed., Wade Trappe and Lawrence C. Washington

[3] Elementary Set Theory, L.T. Leung and Doris L.C. Chen

[4] A First Course in Abstract Algebra 7th Ed. John B. Fraleigh

Topics intended to cover:

1. Set Theory and Logic
   * [1] Chapter 1, 2.1-2.3, 9.5
   * [3] Chapter 1, 2, 3
   * (Optional: More detail on natural numbers) [3] Chapter 6
2. Algorithms

* [1] Chapter 3
* (Optional: More detail on recursive algorithms) [1] Chapter 5.3-5.4, 8.3

1. Number Theory
   * [1] Chapter 4
   * [2] Chapter 3
2. Algebra (Brief Introduction to groups, rings and fields)

* [3] Section 4, 5, 6, 10, 13-15, 18-20, 22-23, 29-31, 33

Remark: This part may be inserted during the discussion of 3, 5 and 6

1. Cryptography

* [2] Chapter 6, 7, 16

1. Coding Theory

* [2] Chapter 18

1. Graph Theory

* [1] Chapter 10-11

\*Topics may be added or deleted (but small change) depending on the teaching progress