

Math 110 - Fall 2016

Subject matter: The course will discuss modular arithmetic, with applications to cryptography and error-correcting codes. We will study many examples, as well as develop a solid grounding in the theory.

Text Book: *Introduction to Cryptography with Coding Theory* by Trappe and Washington.

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Office Hours: Carlsson Tu-Th 12:30-1:30, Ordonez MW 3:30-5

Course requirements: There will be several homework sets, to be submitted by e-mail to math110problemsetsfall2016@gmail.com. Their due dates are included in the schedule below. In addition, there will be a midterm and a final examination, both take home. The dates are included in the schedule below. Since this is a Writing in the Major (WIM) course, there will be a paper assigned, and work on that will begin in November. More detail will be given at the end of October.

Course Schedule

1. Week of 9/25:
2. Week of 10/9: Homework 1 due 10/13
3. Week of 10/16: Homework 2 due 10/20
4. Week of 10/23: Homework 3 due 10/27.
5. Week of 10/30: Take home midterm exam.
6. Week of 11/6: Homework 4 due 11/10. Begin work on WIM paper.
7. Week of 11/13: Homework 5 due 11/17
8. Week of 11/20: Thanksgiving Break
9. Week of 11/27: Homework 6 due 12/1.
10. Week of 12/4: Take home final exam distributed. Exam due 12/12. WIM paper due 12/12.

Homework assignments

1. **Assignment 1:** §2.13, 2, 3,4, 7, §3.13, 1,2,4, 6, 7
2. **Assignment 2:** §3.13, 8,9,10,12,14,17,18,19,20
3. **Assignment 3:** §3.13, 21,22,24, 25, 26, 29, 33, §6.8, 1,2

4. **Assignment 4:** §6.8, 2,4,5,6,19,23, §7.6, 2,5,7
5. **Assignment 5:** §13.3, 2,3, §16.7, 1, 2, 3, 4, 5 ,10, 11 (a-c)
6. **Assignment 6:** §18.12, 1, 3, 4, 5, 6, 9, 11, 12, 13

Homework Solutions available at

<http://math.stanford.edu/~gunnar/110solutions.pdf>