1. **Content of Proposed Course:**

This course will cover the exact same material as the normal Math 412 Theory of Numbers class that is taught in the spring semester. Topics in the course will include Pythagorean triples, prime numbers, modular arithmetic, and cryptography.

2. **Conduct of the Proposed Course:**

This course will consist of a sequence of homework problems, some Maple assignments, and a short paper. Assignments will be very similar to what is given in the normal Math 412 class. The student will meet with the professor weekly to discuss progress.

3. **Course Objectives:**

The goal is to learn about important number theory concepts and how they can be applied, particular to applications such as cryptography. This course is required in the Mathematics Education program.

4. **Assessment Measures:**

 **Grading Policy**:  50 % Major Tests (Two)
                            25 % Final Exam
                            20 % Homework
                             5 %   Term Paper\*

 \* The term paper will be a short paper (4 pages) describing a person or method pertaining
to number theory. Ideas can be found in the text and by seeing me. I must approve the topic
you choose. The paper should be typewritten (using Microsoft Word, for example) using 1.5
inch spacing and should have good grammatical structure with references clearly stated. Do
not plagiarize! The term paper will be due Friday November 22nd.

**Grade Scale:** 90-100    A
                      80-89      B
                      70-79      C
                      60-69      D
                     < 60        F

5. **Background and Justification:**

This course is required in the Mathematics Education program. The student needs to take this course now in order to graduate after the Spring 2014 semester. If the student does not take it before the beginning of the Spring 2014 semester, she will not be allowed to student teach and therefore will be unable to graduate.