SYLLABUS
Math 261 Intro to Number Theory
Fall 2013
MWF 1:00-1:50PM
213 Funkhouser Building

Instructor: Augustine O’Keefe
Email: abok222@uky.edu
Office: 725 Patterson Office Tower
Website: www.ms.uky.edu/~okeefea/Teaching.html
Office Hours: MWF 11:00-12:00AM or by appointment

Texts: Number Theory by George E. Andrews
Basic Concepts of Mathematics and Logic by Michael C. Gemignani

Course Description: This course covers topics from classical number theory including discussions of mathematical induction, prime numbers, division algorithms, congruences, and quadratic reciprocity. The class will also serve as an introduction to mathematical proofs and we will begin by developing the student’s logical reasoning and basic methods of proofs, e.g. proof by contradiction, equivalence of the contrapositive, etc. We will begin by covering Chapters 1-3 of Gemignani before moving into Andrews of which we will be covering at least Chapters 1-5.

Course Objectives: By the end of this course, the student will be able to use a definition, write concise proofs, read mathematical literature, and communicate mathematical ideas effectively (both orally and in writing).

Prerequisites: Grade of C or better in MA 114 or consent of instructor.

Grading: Grades will be calculated as follows:

• Homework (20% total): There will be homework assigned every class on my website. There will be suggested problems in addition to those that you will write up and turn in for a grade. You are encouraged to talk about these problems with each other, however everyone must submit their own write-ups. Identical solutions will not be accepted and will result in a 0 on that assignment. Your solutions should be handwritten neatly and turned in at the beginning of class. If I can’t read it, you can’t get credit.

• In-class portion (20% total): You will be expected to attend class regularly and be an active participant, i.e. asking and answering questions during lecture. We will regularly have student presentations of solutions and to receive the full 20% you will have to present at least once during the semester. Also, there will be the occasional pop quiz.

• Exams (40% total): There will be 2 in-class exams. The dates of these exams will be determined and announced at least a week before they are administered.

• Final Exam (20%): This will be a comprehensive exam and will be given on Wednesday 12/18, 1-3pm.

Here is the grading scale:

A: 90-100   B: 80-89   C: 65-79   D: 50-64   F: 49 and below
Make-up Policy: There will be no make-up exams or quizzes without proper documentation of an excused absence (see below). Late homework will not be accepted.

Contacting Me: The best way to get in touch with me is via email. If you email me after 5:00PM you will likely not receive a response until the next morning.

DO NOT SEND ME EMAILS IN TEXT MESSAGE FORMAT. A proper email is of the following format.

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Dear Dr. O'Keefe, (or some other equally respectful greeting)

Here is the body of your email written in complete sentences with proper grammar, punctuation, and capitalization. Your email should be written with a tone of deference in light of the fact that I will be determining your final grade.

Thank you (or Sincerely or whatever),
Your name

P.S. For the sake of professionalism, I suggest you figure out how to turn off the setting on your smartphone that says, for example, "Sent from my iPhone."
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Staying Informed: My website is where you should go for any information about this class. There will often be announcements that will be posted on the website for this class. This will be especially useful if you missed class. You are also expected to check your email (whichever is associated to Blackboard) multiple times per day. I will often email you with important information.

The Fine Print:

- **Excused Absences:** Students need to notify the professor of absences prior to class when possible. S.R. 5.2.4.2 defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit reasonable cause for nonattendance by the professor.

  Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Information regarding dates of major religious holidays may be obtained through the religious liaison, Mr. Jake Karnes (859-257-2754).

  Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused or unexcused) per university policy.

- **Verification of Absences:** Students may be asked to verify their absences in order for them to be considered excused. Senate Rule 5.2.4.2 states that faculty have the right to request appropriate verification when students claim an excused absence because of illness or death in the family. Appropriate notification of absences due to university-related trips is required prior to the absence.
**Academic Integrity:** Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: http://www.uky.edu/Ombud. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Part II of Student Rights and Responsibilities (available online http://www.uky.edu/StudentAffairs/Code/part2.html) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about the question of plagiarism involving their own work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgement of the fact, the students are guilty of plagiarism. Plagiarism includes reproducing someone else's work, whether it be a published article, chapter of a book, a paper from a friend or some file, or something similar to this. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be.

Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone. When a students assignment involves research in outside sources of information, the student must carefully acknowledge exactly what, where and how he/she employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas which are so generally and freely circulated as to be a part of the public domain (Section 6.3.1).

Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

**Accomodations due to disability:** If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address: jkarnes@email.uky.edu) for coordination of campus disability services available to students with disabilities.