VIRGINIA COMMONWEALTH UNIVERSITY
Department of Mathematics
Math 305 – Elementary Number Theory
Fall 2015

Instructor: Dr Larson
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Web page: www.people.vcu.edu/~clarson, and Blackboard for grades.
Office Hours: 10:00-11:00 MWF

Prerequisite: Math 300

Text: *Introduction to the Theory of Numbers*, 6th ed., G. H. Hardy and E. W. Wright, 2008.

Attendance: There is no attendance policy per se, but there will be homework and in-class assignments that are due.

Goals and Expectations:

- You are expected to attend class, complete homework, and ask questions during class or office hours.
- Communicating mathematics is integral to the creation and transmission of mathematics. You should give significant thought as to how to explain your homework solutions to the class.
- I encourage you to work with others on homework problems, however, any assignments to be turned in must be written up on your own. If you work with others, you must write who you worked with on your assignment.
- Please write neatly on all assignments to be graded; exceptionally messy work may not be graded.
- Only selected homework problems will be graded; other problems will be graded for completion.
- **There are no make-ups on in-class assignments.** I will drop your three lowest in-class assignments, assuming that you couldn't come to class for excusable reasons.
- Make up tests will be considered under exceptional circumstances: if you miss a test and want to be considered for a make-up, you *must* contact me immediately.

Tests and Determination of Grades:

There will be 3 equally weighted tests. Here is the *tentative* schedule:

Test 1, Mon., Sept. 28
Test 2, Mon., Oct. 26
Test 3 (at **FINAL** day and time) Fri., Dec. 11, 1-4

• The tests are closed-book and closed-notes.
• The tests will be based *on* the in-class assignments and assigned homework.
• Use of calculators or other computing technology is not allowed on the tests.
• Tests are written under the assumption that you are studying the material at least 6 hours per week outside of class.

Your final average will be computed as follows:

Test 1, 2, 3:	20% each
Homework:	20%
In-class assignments:	20%

Grade Scale: The 10-point scale: 90-100 A, 80-89 B, etc.

Tentative Course Material: Fundamental Theorem of Arithmetic, Euclid's Theorem, Sieve of Eratosthenes, infinity of primes, Prime Number Theorem, primes in arithmetic progressions, Fermat & Mersenne numbers, moduli of numbers, irrational numbers, GCD, LCM, properties of congruences, Euler's function, Fermat's Theorem, Fermat-Euler Theorem, quadratic residues, Legendre symbol, quadratic reciprocity, representations of numbers by decimals, Nim, continued fractions.

Important Dates to Know:

- Last day to withdraw is: Oct. 30
- Bike Race Break: Sept. 21-25
- Classes end: Dec. 5

Statement on Americans with Disabilities Act:
Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 require Virginia Commonwealth University to provide an 'academic adjustment' and/or a 'reasonable accommodation' to any individual who advises us of a physical or mental disability. If you have a physical or mental limitation that requires an academic adjustment or an accommodation, please arrange a meeting with me at your earliest convenience. Additionally, if your course work requires you to work in a lab environment, you should advise the instructor or department chairperson of any concerns you may have regarding safety issues related to your limitation(s). The VCU Disability Support Services website is http://www.students.vcu.edu/dss/

VCU Honor System: All VCU students are presumed upon enrollment to have acquainted themselves with and have an understanding of the Honor System. Therefore, it is a student's responsibility to ask course instructors to clarify expectations for each assignment in order to be in compliance with the Honor System. The 2007 - 8 VCU Honor System policy statement and purpose is located at http://www.provost.vcu.edu/pdfs/Honor_system_policy.pdf

Classroom Conduct: Professional conduct will be expected at ALL TIMES and disruptive talking or behavior will NOT be allowed. A description of the VCU Student Conduct in Instructional Settings Policy can be found at: http://www.ts.vcu.edu/policies/studentconduct.html

VCU Statement on Safety

- Sign up to receive VCU text messaging alerts (http://www.vcu.edu/alert/notify). Keep your information up-to-date.
- Know the safe evacuation route from each of your classrooms. Emergency evacuation routes are posted in on campus classrooms.
- Listen for and follow instructions from VCU or other designated authorities.
- Know where to go for additional emergency information (http://www.vcu.edu/alert).
- Know the emergency phone number for the VCU Police (828-1234). Report suspicious activities and objects.

University Counseling Services: http://www.students.vcu.edu/counseling/