

Course Information Sheet: Fall 2015, Math 30800, Section R

Course Title: Bridge to Advanced Mathematics

Catalog Description: This course explores the logical and foundational structures of mathematics, with an emphasis on understanding and writing proofs. Topics include set theory, logic, mathematical induction, relations and orders, functions, Cantors theory of countability, and development of the real number system.

Meeting time and place: Tuesdays and Thursdays 3:30-4:45PM in NAC 5/150.

Instructor Information:

- **Name:** Prof. Hooper
- **Office:** NAC 6/282
- **Email:** whooper@ccny.cuny.edu
- **Office Phone:** (212) 650-5149

Course Textbooks:

- *Mathematical Proofs*, 3rd edition, by Chartrand, Polimeni, and Zhang.
- *Elementary Analysis*, 2nd edition, by Ross. This book is freely available as a PDF while you are on campus. Visit:
<http://link.springer.com/book/10.1007%2F978-1-4614-6271-2>

Grades: Grades will be computed from the following:

- Attendance (See the attendance policy below.)
- Homework and Programming Assignments (20%)
- Two midterm exams (20% each) held on Thursday, October 8th and Tuesday, November 24th.
- The final exam (40%) held Tuesday, December 22nd from 3:30pm to 5:45pm in our usual classroom.

Your final score will be tabulated out of 100% as indicated by the percentages above. A curve will then be applied to determine your final grade.

Course information: Course information can be found on the website:

<http://wphooper.com/teaching/2015-fall-308/>

This site includes a list of homework assignments, a tentative course calendar and a list of course documents.

Blackboard: A record of your grades in this course can be found on blackboard. In addition, programming assignments must be submitted on blackboard. To access blackboard visit <http://bbhosted.cuny.edu/>. Please let me know if you have trouble accessing blackboard, or trouble using the blackboard website.

Email: It is important that you are accessible via email through blackboard.

General expectations: For each hour spent in the classroom, I expect you to spend several hours reading and understanding the book, understanding lecture notes, and doing homework. Practice (doing problems and proofs) is an important part of understanding mathematics. Only adequate practice will guarantee that you can complete midterm and exam problems in a timely manner.

Final exam: The final exam will be held on Tuesday, December 22nd from 3:30pm to 5:45pm. Ensure that you have no time conflicts. A makeup for the final exam is offered only under extremely compelling circumstances. Notify me as soon as you know you will have to miss the final.

Midterms: You will be given the full class period to complete each midterm. If a midterm is missed under well documented and sufficiently compelling circumstances, then a makeup can be taken. Notify me ahead of a midterm you expect to miss to be sure your circumstances are sufficiently compelling. The makeup must be taken within one week of the originally scheduled midterm. A grade of zero will be assigned to anyone who does not take a midterm or a makeup.

Homework assignments: Homework assignments will be made available on the course website at least one week before the assignment is due. I encourage you to work in groups on the homework problems, especially if this best suits your learning style. Nonetheless, you should be confident that you understand how to do each problem, and should be able to solve similar problems independently. Failure to ensure that you can solve problems independently will surely have a negative effect on exam grades. You must turn in your own write up of each homework problem.

Programming assignments: You will be assigned a programming assignments every week or two in Python. There are a lot of overlapping concepts between programming and mathematical proofs. It is hoped that learning to program will reinforce the mathematical concepts in the course and broaden the applicability of ideas taught in the course. I expect to have 7 programming assignments or so making the programming assignments worth $2/3$ of the homework grade. The lowest programming assignment grade will be dropped.

Homework and Programming assignments: Homework will be collected at the beginning of the class it is due, and programming assignments are due at the assigned date and time. The lowest two homework grades will be dropped as will the lowest programming grade. All homework and programming assignments which are not dropped will count equally toward your homework grade. You must list any collaborators and any sources used on homework and programming assignments. (Failure to do so is a violation of the academic integrity policy.)

Attendance: As students, class is extremely important for learning. You will be introduced to the material, and the relative importance of topics in the course will be revealed. For this reason, attendance is mandatory and factors into your grade. Missing an excess of five classes may result in you being dropped from the course, and will certainly result in a reduction of your final score by 10%. Occasionally, exceptions to this policy will be made,

but only for good reason and only with notification prior to the absence. Good reasons include illness with a doctor's note and many religious observations.

Lateness: Lateness to class is unacceptable because it disrupts the learning process of the whole class. For this reason, any student who arrives more than 5 minutes after class begins will be considered late. Two late attendances are considered the equivalent of one absence. Thus, sufficiently many late attendances will result in actions as described in the Attendance policy. In addition, any student who arrives 15 minutes after a class begins will be considered absent from that class period.

Academic integrity: You are expected to adhere to the CUNY Policy on academic integrity. This policy is posted at:

http://www.ccny.cuny.edu/about/upload/academic_integrity.pdf