MATH 410/AMCS 510: COMPLEX ANALYSIS

Instructor: Lechao Xiao
Lecture: TTH 3:00PM-4:30PM, Room: DRL 4C4
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Office Hours: Wednesday 10-11am and by appointment.

Course assistant: Jin Woo Jang
                         Office and Office hours: 2-3pm Thursday at DRL 3C13
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Textbook: *Joseph Bak and Donald J. Newman Complex Analysis, 3rd ed.*
All texts are on reserve in the Math/Physics Library.

Course Website: Course materials/communications will be posted on Canvas:
https://canvas.upenn.edu/courses/1271654

Prerequisites: Math 240 or permission of the instructor.
Course Description: We plan to cover the first 12 Chapters of the book, starting with the properties of complex numbers. We will then proceed to power series, analytic (holomorphic) functions and their properties, complex integrals, the Cauchy Theorem, the Cauchy Integral Formula, Laurent expansions, residues, and contour integrals. Further topics such as conformal mappings, the Riemann Mapping Theorem, if time permitting.

   Unlike MATH 240 and earlier calculus courses, this course will be **entirely proof-based**, meaning that lectures, homeworks, and exams will all be primarily focused with the task of creating proofs of the facts that we will encounter.

Grading policy: Your grade for the course will be determined based on the following factors:

  (I) **Homework**: 20%

 (II) **Two Midterm Exams**: 25% each

(III) **Final**: 30%

Homework: There will be weekly homework and will be around 10 homework assignments in total. Homework assignment is due by 4pm on Friday in our TA's mailbox, with the first one due on Sep 11th. Collaboration on homework assignments is encouraged, but any work you turn in must be your own. If you collaborate with other students, please write down their names. Late homework will not be accepted but I will drop two of your lowest homework scores.

Exams: There will be two in-class midterm exams and one in-class final. Please let me know within the first two weeks if you have a conflict with any of these dates. Absence from an exam

is a serious problem. Depending on circumstances, you may or may not be allowed to make up a missed midterm exam.

1. Midterm Exam I: Sep 29th, Tuesday, in-class.

2. Midterm Exam II: Nov 3rd, Tuesday, in-class.

3. Final Exam: Dec 8th, Tuesday, in-class.

Students with Disabilities: Please dont hesitate in contacting SDS: http://www.vpul.upenn.edu/lrc/sds/.

Code of Academic Integrity : The following is from the Universitys website on academic integrity "Since the University is an academic community, its fundamental purpose is the pursuit of knowledge. Essential to the success of this educational mission is a commitment to the principles of academic integrity. Every member of the University community is responsible for upholding the highest standards of honesty at all times. Students, as members of the community, are also responsible for adhering to the principles and spirit of the following Code of Academic Integrity found here http://www.upenn.edu/academicintegrity/ai_codeofacademicintegrity.html If a student is unsure whether his action(s) constitute a violation of the Code of Academic Integrity, then it is that students responsibility to consult with the instructor to clarify any ambiguities."

Your Personal Information(Optional)
Name:

Major and Year:

Hometown:

Interests:

Something interesting, amusing, or impressive about yourself:

Any experience of writing proof? Please describe your level of familiarity with proof writing.

Your motivation to attend this course:

What do you expect from this course: