

Complex Analysis - MATH-4320-AU & AG

Spring 2022, Math 4320: Complex Analysis

Class information

- **Lectures:** MW 11am-12:15pm
- **In person class location:** Skiles 249
- **Live lectures and recordings via BlueJeans:** access via Canvas
 - **NOTE:** This class is on the "in-person" mode, and is NOT hybrid. Live lectures and recordings are offered as an alternative for students who cannot attend the class in person. It is hard to monitor questions from remote participants and therefore, those questions will not be answered in class.
- **Canvas:**
 - **NOTE:** Lecture notes will be posted on *Canvas>Files*.
- **Instructor :** Prof. Hannah Choi (email)
 - Office hours: M 12:30-1:30 (Skiles 265; may change its mode to virtual depending on the evolving COVID situation) & W 12:30-1:30 (MS Teams); Or by appointment.
 - MS Teams:
 - Join our class MS Teams by using this code
 - Office hours will be held on the channel "Office hour". Please wait until I start each office hour meeting to join.
 - Email policy: I will not answer questions about homework problems via email. Please either use office hours or use the MS Teams' "General" channel. Students are strongly encouraged to work together and answer each other's questions on MS Teams. For other course related questions, please add the header [MATH 4320] in your email title.

Course information

- **Course Description:** Topics from complex function theory, including contour integration and conformal mapping.
Prerequisites: MATH 2401 or MATH 24X1 or MATH 2411 or MATH 2551 or MATH 2550 or MATH 2X51
- **Textbook:** Complex Variables and Applications, Brown & Churchill, 9th edition, McGraw-Hill
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Grading

- **Homework:** 30%
- **Midterm 1:** 20%
- **Midterm 2:** 20%
- **Final:** 30%

Homework

- 30 points each
- Assigned on Wednesdays (right after class), due next Wednesday. (*except for the HW assignments right before Midterm Exams and Spring Break)
- Submit electronically via Canvas by next Wednesday 7pm.
- Homework will be graded statistically. For problem sets with more than three problems, you will receive 6/30 of the credit for handing in a complete assignment (solutions for every problem), and the remaining 24/30 will be for correct solutions to three randomly chosen problems.
- **Late homework is NOT accepted.**
- The lowest homework grade will be dropped.
- The grader is allowed to subtract points for presentation.

Exams

- **Midterms:**
 - **Midterm Exam 1** : Monday 2/14 in class (11am-12:15pm, Skiles 249)
 - **Midterm Exam 2** : Wednesday 3/30 in class (11am-12:15pm, Skiles 249)
- **Final:** Friday April 29, 11:20am-2:10pm in our class room (Skiles 249)

Tentative schedule

- **Week 1** (1/10, 1/12): **Chapter 1 Complex Numbers**
 - Wed, 1/12 : HW 1 posted (due Wed, 1/19)
- **Week 2**(1/17 MLK day, 1/19): **Chapter 1 Complex Numbers & Chapter 2 Analytic Functions**
 - Wed, 1/19 : HW 2 posted (due Wed, 1/26)
- **Week 3** (1/24, 1/26) : **Chapter 2 Analytic Functions**
 - Wed, 1/26 : HW 3 posted (due Wed, 2/2)
- **Week 4** (1/31, 2/2): **Chapter 2 Analytic Functions & Chapter 3 Elementary Functions**
 - Wed, 2/2 : HW 4 posted (due Wed, 2/9)
- **Week 5** (2/7, 2/9): **Chapter 3 Elementary Functions & Chapter 4 Integrals**
 - Wed, 2/9 : HW 5 posted (***due Mon, 2/21***)
- **Week 6** (2/14, 2/16): **Chapter 4 Integrals**
 - **Mon, 2/14 : Midterm 1 (Chapter 1-Chapter 3) in class (Skiles 249).**
- **Week 7** (2/21, 2/23) : **Chapter 4 Integrals**
 - Wed, 2/23 : HW 6 posted (due Wed, 3/2)
- **Week 8** (2/28, 3/2): **Chapter 5 Series**
 - Wed, 3/2 : HW 7 posted (due Wed, 3/9)
- **Week 9** (3/7, 3/9): **Chapter 5 Series & Chapter 6 Residues and Poles**
 - Wed, 3/9 : HW 8 posted (due Wed, 3/16)
- **Week 10** (3/14, 3/16) : **Chapter 6 Residues and Poles**
 - Wed, 3/16 : HW 9 posted (***due Mon, 3/28***)
- **Week 11** (3/21, 3/23): **No class- Spring Break.**
- **Week 12** (3/28, 3/30): **Chapter 7 Applications of Residues**

- **Wed, 3/30 : Midterm 2 (Chapter 4-Chapter 7) in class (Skiles 249).**
- **Week 13** (4/4, 4/6): **Chapter 8 Mapping by Elementary Functions**
 - Wed, 4/6 : HW 10 posted (due Wed, 4/13)
- **Week 14** (4/11, 4/13): **Chapter 9 Conformal Mapping**
 - Wed, 4/13 : HW 11 posted (due Wed, 4/20)
- **Week 15** (4/18, 4/20): **Chapter 9 Conformal Mapping**
- **Week 16** (4/25): *Last day of class*
- **4/29 Friday: Final Exam**, 11:20am-2:10pm

Course materials policy

Classes may not be recorded by students without the expressed consent of the instructor unless it is pursuant to an accommodation granted by the Office of Disability services. Class recordings, lectures, homework problems, exam problems, and other materials posted on Canvas are for the sole purpose of educating the students currently enrolled in the course and should not be shared or distributed outside of the class. Students may not record or share the materials or recordings, including screen capturing, unless the instructor gives permission.

Honor code

All students are expected to comply with the Georgia Tech Honor code. Please review the student code of conduct and the [Honor Code](https://policylibrary.gatech.edu/student-affairs/academic-honor-code) [_ \(https://policylibrary.gatech.edu/student-affairs/academic-honor-code\)](https://policylibrary.gatech.edu/student-affairs/academic-honor-code). Any evidence of cheating or other violations of the Georgia Tech Honor Code will be submitted directly to the Office of Student Integrity

COVID safety

Georgia Tech is committed to promoting a campus community that supports holistic well-being, as well as empowering students to make choices that enable positive health outcomes. As we continue to live and learn through a pandemic, Georgia Tech strongly encourages students to utilize several tools not only to reduce their own risks of infection from Covid-19, but also to help reduce the overall levels of transmission in the community. These tools include:

1. Getting fully vaccinated. Getting vaccinated at Tech is easy and free.
2. Wearing face coverings consistently in all indoor settings and also in outdoor settings when in close proximity to others.
3. Getting tested on a regular basis, regardless of whether you are vaccinated or asymptomatic. No appointment is needed for Georgia Tech's asymptomatic testing, and it is free.
4. Immediately self-quarantining or self-isolating if you experience any symptoms that could be related to Covid-19 or if you have tested positive for Covid-19.