

Math 103A Syllabus, Summer 2024

Course Information: This is a 10-week course, just like a regular quarter course. Lectures are MWF from 1:00 PM to 1:05 PM (6/24/2024 - 8/30/2024). Recorded lectures will be available at **Yuja**. Lecture notes will be posted in a Module folder. We use Gradescope (see below) to submit scanned homework assignments and midterms. We use Canvas **Ed Discussions** for Q&A on homework problems and other questions.

Learning Outcomes: By taking this course, you will learn the following.

1. You will understand the difference between the complex and usual calculus differentiation.
2. You will understand how to use residues to calculate difficult integrals such as the Dirichlet and Fresnel integrals.
3. You will understand the beautiful and deep theory of complex analysis, sometimes referred to as a crown jewel in mathematics.
4. You will understand that complex numbers are not imaginary but very, very real, and they provide tools for a deep description of how nature works. They show you the "unreasonable effectiveness" of mathematics.

Gradescope: We will use [Gradescope\(Links to an external site.\)](#) to grade your assignments/exams. Get familiar with this tool at https://www.gradescope.com/get_started (Links to an external site.).

Instructor

Instructor and Office Hours

Professor Hirotaka Tamanoi (tamanoi@ucsc.edu)	Office: McHenry 4180	Mondays, Wednesdays, and Fridays, 1:30 2:30 PM.
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Lecture Videos, Lecture Notes

Lecture dates: Mondays, Wednesdays, and Fridays from 12 PM to 1:05 PM, from 6/24/2024 to 8/30/2024.

Lecture Recordings: Zoom lectures will be recorded and will be available in the **Yuja** tab a few hours after each lecture.

Lecture notes will be posted in the Lecture Notes folder in the **Modules** tab on the left navigation pane. Lecture Notes can also be found in the **Files** tab

Textbook: We will use Inclusive Access (IA), and our textbook will be available as an ebook. We will cover materials from Chapters 1 to 7, and some more chapters if time permits. Note that our textbook is the 9th edition.

Complex Variables and Applications, 9th edition, by J.W. Brown and R.V. Churchill

Lecture Schedule: We will cover the main materials in chapters 1 to 7, then select several later chapters if we have time. The following table gives a tentative schedule of lectures, exams, and homework assignments.

Week	Monday	Wednesday	Friday
Week 1	Chapter 1	Chapter 1	Chapter 1
Week 2	Chapter 2	Chapter 2	Chapter 2
Week 3	Chapter 3	Chapter 3	Chapter 3
Week 4	Chapter 4	Chapter 4	Chapter 4
Week 5	Chapter 4	Chapter 5	Chapter 5
Week 6	Chapter 5	Chapter 5	Chapter 5
Week 7	Chapter 6	Chapter 6	Chapter 6
Week 8	Chapter 6	Chapter 6	Chapter 7
Week 9	Chapter 7	Chapter 7	Chapter 7
Week 10	Chapter 7	Review	Final Exam (In Class)

Homework Assignments

Homework Assignments: Each Assignment is finalized after each class and will be posted at Gradescope, and due three days later at midnight.

Canvas Ed Discussions: You can ask various questions at Canvas **Ed Discussions**. Your fellow students and sometimes I answer your questions.

Midterms and the Final Exam

Midterm Exams (7/17/, 8/7, 8/21) with Gradescope: There will be three midterms on Wednesdays. These exams are meant to review and master materials covered in the previous weeks.

Final Exam (Gradescope): The final Exam will take place on Friday, 8/30 (Schedule TBA, in class).

Course Grade

Homework Assignments 30%	Attendance/Quiz 5%	Midterms 30%	Final Exam 35%
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