

Math 103A Syllabus, Summer 2020

Course Information: This course will be a Zoom based synchronous class, Gradescope for written assignments and exams, and Piazza for Q&As for homework problems. In Math 103A, we will study the amazing properties of complex analytic functions and their applications. The theory of complex analysis was established in the 18th century, and it is one of the crown jewels of mathematics. Topics covered will include Cauchy Integral Formula, Cauchy-Goursat Theorem, contour integrals, series expansions, residues, and conformal mappings. The highlight of the course is the application of residues to calculate seemingly impossible integrals. Prerequisite(s): [MATH 23BLinks to an external site.](#); and either [MATH 100Links to an external site.](#) or CMPS 101.

VERY IMPORTANT: We will use Gradescope to grade your assignments/exams. To submit your assignments/exams, **you need to be able to scan your assignments and convert each of them into a single PDF file.** If you cannot do so, there is no way we can grade your assignments. So make sure you can scan your hand-written notes into a PDF file. If you do not have technology for this, contact slug support: <https://deanofstudents.ucsc.edu/slug-support/program/contact.html>[Links to an external site.](#)

If you live in a different time zone, here is an instruction to set your time zone. [How do I set a time zone in my user account as a student? \(Links to an external site.\)](#)

Important Dates Drop: Monday, August 3, Request for “W”: Friday, August 14

Summer is unique. You will not be dropped for non-attendance or non-payment. You must drop yourself. Dropping before the deadline results in a full-tuition reversal/refund. Withdraw posts a W for the grade and full tuition is charged (no refund). For all dates and deadlines, including ‘change of grade option’ (P/NP) and grades due, here is the summer academic calendar: <https://summer.ucsc.edu/studentlife/index.html>[Links to an external site.](#) For questions about dropping, requesting a W grade for a course, or withdrawing from the summer quarter, email summer@ucsc.edu.

UC Santa Cruz Orientation Module for Summer 2020: Useful official orientation information from UCSC for summer session students can be found in the **Modules** tab on the left.

Instructor and Zoom Office Hours

Professor Hirotaka Tamanoi (tamanoi@ucsc.edu)	Mondays, Wednesdays, Fridays 12 PM to 12:30 PM
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TA and Zoom Office Hours

Fulya Tastan (ftastan@ucsc.edu)	Mondays, Thursdays 4 PM to 5 PM, Tuesdays 11 AM to 12 PM
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You access these Zoom Office Hours through the **Zoom** tab in the navigation menu on Canvas. You will need passcode and UCSC email addresses to attend these Zoom Office Hours (passcodes are already embedded in the Zoom invitation, and you do not have to worry about it).

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

1. You will understand how to use residues to calculate difficult integrals.
2. You will understand the beautiful theory of complex analysis.
3. You will understand that the use of complex numbers provides a deep and very useful theory.

Synchronous Zoom Lectures, Yuja, and Lecture Notes: My course is hosted on [CanvasLinks to an external site.](#) You do not need to sign up for an account, and you log in with your CruzID and Gold Password at [canvas.ucsc.eduLinks to an external site.](#) See [Canvas Getting Started Student Guide \(Links to an external site.\)](#). See the **Zoom** item in the navigation menu on the left pane for schedule and information. You will need to *register* for these lectures, and *passwords* and *UCSC emails* will be required to participate in zoom lectures (see the **Announcements**).

Lecture dates are July 27 to August 28, Mondays, Wednesdays, and Fridays from 9 AM to 11:30 AM.

Lecture Recordings: Zoom lectures will be recorded and will be available in **Yuja** located on the left navigation pane. In **Yuja**, look for "All Courses" in the "Shared" section. Math 103A channel should contain Zoom lecture recordings. These recordings come with the complete captioning of the video.

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

Textbooks: We have one required textbook. We will cover Chapters 1 to 7, and some more chapters if time permits. Note that our textbook is the 9th edition. The eBook version is available freely at [ZLibrary \(Links to an external site.\)](#).

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

Lecture Schedule: We will first cover the main materials in chapters 1 to 7, then we will select several later chapters if we have time. The tentative schedule is the following, which lists sections numbers. Lecture notes are available in the **Modules** section found in the left navigation pane.

Week	Monday	Wednesday	Friday
Week 1	Chapter 1	Chapters 1 and 2	Chapter 2

Week 2	Chapter 3	Chapters 3 and 4	Chapters 4
Week 3	Chapters 4	Chapter 5	Chapter 5
Week 4	Chapter 6	Chapter 6	Chapters 6, 7
Week 5	Chapter 7	Chapter 7	Final Exam

TA directed Zoom Discussion Sections and Quizzes (Starting on

Friday 7/31/2020): There will be Zoom discussion sections for **all of you** twice a week with your TA, on **Tuesdays and Fridays from 4 PM to 5:45 PM**, you are expected to attend both sections. This is because summer sessions progress twice as fast as regular quarter classes. These discussion sections are meant to help you with homework assignment problems and prepare you for Written Assignments on Wednesdays.

During the Zoom discussion sections, your TA will make effective use of the Breakout Rooms feature of Zoom for small-group collaborative work. TAs will give problems for small groups to work on, and TA will visit groups to discuss/advise each group to further discussion. TA will ask a few groups to present the results of their collaborative work on some problems to the entire class. After questions and answers sessions and small group work sessions, TA will give you several simple multiple choice quiz questions on Canvas, which will be graded instantly by Canvas to check your understanding. These quiz problems will become available during discussion sections in the **Quizzes** tab in the navigation pane. Quiz solutions will be available in the Quizzes tab from midnight on the day after the quiz.

Written Assignment with Gradescope: There will be a weekly written assignment on Wednesdays starting 8/5. This is a short open-book exam of about 60 minutes (duration depending on each assignment), and we will use [Gradescope\(Links to an external site.\)](#). Get familiar with this tool at [https://www.gradescope.com/get_started \(Links to an external site.\)](https://www.gradescope.com/get_started). Especially, check the video titled [For students: Submit PDF homework \(Links to an external site.\)](#) to review how to upload your scanned PDF files to Gradescope.

Problems in these written assignments are from the previous week's lecture materials. So, for example, problems of Written Assignment 1 on 8/5 come from lectures on Monday, Wednesday, and Friday of the first week. You resolve any issues from Monday and Wednesday lectures by the end of Friday discussion sections, and you resolve any questions from Wednesday and Friday lectures during Tuesday sections to prepare for Written Assignments on Wednesdays.

Instruction for Written Assignments

1. The exam will be available between 12 PM and 11:59 PM on Tuesdays at Gradescope for download. Once you start, you will have a specified time block (about an hour) to work on the problems and upload scanned PDF files. So you will

have to start well before 11 PM at the latest. You cannot divide this specified time block into several parts. You can leave and come back to Gradescope multiple times during the time limit.

2. You can go to the Gradescope website from the **Assignments** tab or the **Gradescope** tab on the left.
3. You work on your solutions within a specified time. You write solutions to each problem on new sheets. You may use an iPad or tablet to write your solutions.
4. You scan all of your solution sheets into a single PDF file (by using your phone app etc.) and upload them into your account in Gradescope. Your account should already be set up for you. When you upload to Gradescope, follow the instructions and indicate which part of your PDF file corresponds to which problem. See the instruction video [For students: Submit PDF homework\(Links to an external site.\)](#).
5. You will work on these written assignments on your own. Cooperation with other students and asking at homework websites such as Chegg are prohibited. Students who use Cheggs and/or other homework sites to work on written assignments may fail the course. (These websites cooperate with us.) See also [Instruction for Written Assignments.pdf](#) .

Time limit: The time limit is strictly enforced. You should start preparing for the submission at least 5 minutes before the end of the time limit. Or you can upload your solutions one problem at a time. You can submit as many times as you wish before the time limit. It is your responsibility to make sure that your scanner works fine and the internet connection is good before you start working on the problems. A problem with your scanner or internet is not an acceptable reason for late or no submission. If you do not have the technology for this, contact slug support: <https://deanofstudents.ucsc.edu/slug-support/program/contact.html> [Links to an external site.](#)

If you miss the submission time limit, you have to send me your PDF solutions by email as soon as possible. Your submission will be still accepted with a 20% reduction in the score. If I receive your submission more than 10 minutes late, your score will be reduced by 40%. To be fair with all students, all submissions which are more than 30 minutes late will not be accepted.

Purpose: The aim of these written assignments is to gauge the depth of your understanding of the materials and to practice writing solutions clearly with sufficient explanations. If we cannot read your answer, you may not receive any credits, even if your answer turns out to be correct. Grading criteria are

1. sufficient explanation of your solution method,
2. organization and clarity of your writing of your solution, and
3. correctness.

Note that correctness is only the third criterion. If you just write your answer, *you may not get credits at all, even if the answer is correct.* Solutions of Written Assignments will be available in the **Modules** section of Canvas shortly after the due date.

Piazza: We will be using Piazza for class discussion. The system is highly catered to getting you some help fast and efficiently from classmates, the TA, and myself. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza. All of you can contribute to the discussion on the same problem, even anonymously. You can use LaTeX to type math formulas, too. TAs will frequently check Piazza to leave comments. You can have access to Piazza from the Piazza item in the left navigation pane on this Canvas page, or directly at the URL: <https://piazza.com/ucsc/summer2020/math103a01/home> (Links to an external site.)

If you have any problems or feedback for the developers, email team@piazza.com.

Final Exam (Gradescope): Final Exam will take place on 8/28, during class time. This will be Zoom proctored. Before the exam, when you arrive, you will be placed in the Zoom waiting room, and you will be admitted to the Zoom exam "room" one by one after checking your photo ID. So please arrive at least 15 minutes earlier than the exam time with your photo ID. During the exam time, we will proctor you through Zoom. So your digital camera should show you and your solution sheets during the exam time. We may incorporate some other procedures to preserve the integrity of the final exam. The final exam problem sheet will be available on Canvas once everybody has been checked in. Please have sufficiently many white papers ready to write your solutions. The same criteria used to grade written assignments also apply to grade your final exams. So write clearly in an organized way with explanations. At the end of the exam period, you scan your work into PDF files (using your phones, etc.), and you upload them into your account in Gradescope.

Grades: Extensions of deadlines for Written Assignments are not granted unless you encounter (documented) extenuating circumstances. Practicing discipline and punctuality is part of this course. You will have plenty of time to complete these assignments. However, if you do encounter a situation beyond your control, we will do our best to accommodate you.

Homework Assignments >30%	Quizzes <10%	Written Assignments 25%	Final Exam 35%
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At the end of the course, class averages for the above categories will be calculated, and they will be rescaled so that the above percentages are reflected. Then the total scores of individual students will be calculated, and the course grades will be determined.

Academic Resources

DRC Remote Accommodations: The Disability Resources Center reduces barriers to inclusion and full participation for students with disabilities by providing support to individually determine reasonable academic

accommodations. Operations continue via remote appointments. If you have questions or concerns about exam accommodations or any other disability-related matter, email the DRC Schedulers at drc@ucsc.edu for an appointment. You can also contact DRC by phone at 831-459-2089.

Academic Integrity: All members of the UCSC community benefit from an environment of trust, honesty, fairness, respect, and responsibility. You are expected to present your own work and acknowledge the work of others in order to preserve the integrity of scholarship. Academic integrity includes:

- Following exam rules
- Using only permitted materials during an exam
- Viewing exam materials only when permitted by your instructor
- Keeping what you know about an exam to yourself
- Incorporating proper citation of all sources of information
- Submitting your own original work

Academic misconduct includes, but is not limited to, the following:

- Disclosing exam content during or after you have taken an exam
- Accessing exam materials without permission
- Copying/purchasing any material from another student, or another source that is submitted for grading as your own
- Plagiarism, including use of Internet material without proper citation
- Using cell phones or other electronics to obtain outside information during an exam without explicit permission from the instructor
- Submitting your own work in one class that was completed for another class (self-plagiarism) without prior permission from the instructor.
- Violations of the Academic Integrity policy can result in dismissal from the university and a permanent notation on a student's transcript. For the full policy and disciplinary procedures on academic dishonesty, students and instructors should refer to the [Academic Misconduct page Links to an external site.](#) at the [Division of Undergraduate Education Links to an external site.](#)

Religious Accommodation: UC Santa Cruz welcomes diversity of religious beliefs and practices, recognizing the contributions differing experiences and viewpoints can bring to the community. There may be times when an academic requirement conflicts with religious observances and practices. If that happens, students may request reasonable accommodation for religious practices. The instructor will review the situation in an effort to provide a reasonable accommodation without penalty. You should first discuss the conflict and your requested accommodation with your instructor early in the term. You or your instructor may also seek assistance from the [Dean of Students' office Links to an external site.](#)

Principle of Community: The University of California, Santa Cruz expressly prohibits students from engaging in conduct constituting unlawful discrimination, harassment, or bias... [More here Links to an external site.](#) I am committed to providing an atmosphere

for learning that respects diversity and supports inclusivity. We need to work together to build this community of learning. I ask all members of this class to:

- be open to and interested in the views of others
- consider the possibility that your views may change over the course of the term
- be aware that this course asks you to reconsider some “common sense” notions you may hold
- honor the unique life experiences of your colleagues
- appreciate the opportunity that we have to learn from each other
- listen to each other’s opinions and communicate in a respectful manner
- keep confidential discussions that the community has of a personal (or professional) nature
- ground your comments in the texts we are studying. Refer frequently to the texts and make them the focus of your questions, comments, and arguments. This is the single most effective way to ensure respectful discussion and to create a space where we are all learning together.

Title IX/Care Advisory: The [Title IX Office Links to an external site.](#) is committed to fostering a campus climate in which members of our community are protected from all forms of sex discrimination, including sexual harassment, sexual violence, and gender-based harassment and discrimination. Title IX is a neutral office committed to safety, fairness, trauma-informed practices, and due process. Title IX prohibits gender discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking. If you have experienced sexual harassment or sexual violence, you can receive confidential support and advocacy at the Campus Advocacy Resources & Education (CARE) Office by calling (831) 502-2273. In addition, Counseling & Psychological Services (CAPS) can provide confidential, counseling support, (831) 459-2628. You can also report gender discrimination directly to the University’s Title IX Office, (831) 459-2462. Reports to law enforcement can be made to UCPD, (831) 459-2231 ext. 1. For emergencies, call 911.

Difficult Conversations: In our in-class and online discussions and dialogues, we will have the opportunity to explore challenging, high-stakes issues and increase our understanding of different perspectives. Our conversations may not always be easy. We sometimes will make mistakes in our speaking and our listening. Sometimes we will need patience or courage or imagination or any number of qualities in combination to engage our texts, our classmates, and our own ideas and experiences. We will always need respect for others. Thus, an important aim of our classroom interactions will be for us to increase our facility with difficult conversations that arise inside issues of social justice, politics, economics, morality, religion, and other issues where reasonable people often hold diverse perspectives. This effort will ultimately deepen our understanding and allow us to make the most of being in a community with people of many backgrounds, experiences, and positions.

Student Services: [Counseling and Psychological Services Links to an external site.](#) Many students at UCSC face personal challenges or have psychological needs that may interfere with their academic progress, social development, or emotional wellbeing.

The university offers a variety of confidential services to help you through difficult times, including individual and group counseling, crisis intervention, consultations, online chats, and mental health screenings. These services are provided by staff who welcome all students and embrace a philosophy respectful of clients' cultural and religious backgrounds, and sensitive to differences in race, ability, gender identity, and sexual orientation.

Student Success and Engagement Hub [Links to an external site.](#) The Division of Student Success provides campus-wide coordination and leadership for student success programs and activities across departments, divisions, colleges, and administrative units.

Tutoring[Links to an external site.](#) **and Learning Support:** At Learning Support Services (LSS), undergraduate students build a strong foundation for success and cultivate a sense of belonging in our Community of Learners. LSS partners with faculty and staff to advance educational equity by designing inclusive learning environments in Modified Supplemental Instruction, Small Group Tutoring, and Writing Support. When students fully engage in our programs, they gain transformative experiences that empower them at the university and beyond.

Slug Support Program [Links to an external site.](#)[Links to an external site.](#) College can be a challenging time for students, and during times of stress, it is not always easy to find the help you need. Slug Support can give help with everything from basic needs (housing, food, or financial insecurity) to getting the technology you need during remote instruction. To get started with SLUG Support, please contact the [Dean of Students](#) [Links to an external site.](#) Office at 831-459-4446, or you may send us an email at deanofstudents@ucsc.edu.

Slug Help/Technology[Links to an external site.](#) The ITS Support Center is your single point of contact for all issues, problems, or questions related to technology services and computing at UC Santa Cruz. To get technological help, simply email help@ucsc.edu.

On-Campus Emergency Contacts: Slug Help/[Emergency Services](#)[Links to an external site.](#) For all other help and support, including the health center and emergency services, start [here](#) [Links to an external site.](#) Always dial 9-1-1 in the case of an emergency.