MATH 103A: Complex Analysis
Summer 2019

(This document's location is: http://tamanoi.math.ucsc.edu/tamanoi/Math103A_Summer2019.htm)

Important Deadlines: Drop: Monday August 5, Request for a W grade: Friday, August 16

Instructor
Professor Hirotaka Tamanoi
Office: McHenry 4180
Hours: Monday 1:30PM-3:30PM
Wednesday 1:30PM-3:00PM
or by appointment
Phone: (831) 459-5174
tamanoi@ucsc.edu

Lecture
Room: Soc Sci 2, room 137
MWF: 10:00AM -- 12:30PM

Discussion Sections and TA
TA: Alonso Sanchez asanch52@ucsc.edu
Sections: Wednesday and Friday 3:30PM to 5PM
Office Hours:
Textbook

*Complex Variables and Applications, 9th edition*

By James Brown and Ruel Churchill

McGraw-Hill

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Course Description

Complex analysis is a jewel of classical mathematics. We will cover at least up to chapter 7 of the textbook, culminating in the application of residues to computation of integrals.

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Homework, Quiz, Exams, and Course Grade

**Homework:** Homework assignments are given after every class and posted on this course web page. See below. They will be due on Fridays 5PM, starting on the first week. There will be a homework folder in the filing cabinet on the first floor of McHenry library across the room 1247.

**Homework Policy:** You can discuss homework problems with your fellow students, but you have to write your own answers. **However:** when we decide that homework assignments from two students are suspiciously similar, both students will receive no credits. And other disciplinary actions may follow. So please write your homework assignments in your own words.

**Quiz:** In each discussion section, there will be a short quiz consisting of one or two relatively basic problems from the materials from the previous lecture(s). These quizzes are meant to continue motivating you to work on homework problems. Quiz problems are from the previous two lectures.

Wednesday quiz: From Friday and Monday lecture.
Friday quiz: From Monday and Wednesday lecture.

**Quiz Policy:** If you know you are going to miss a quiz, you must prearrange with your TA to take a quiz at an alternate time, before the quiz is given, or within two business days. Thus, you must take a make-up quiz on or before Friday for the Wednesday quiz, and on or before Tuesday for
the Friday quiz. Beyond these deadlines, make-up quizzes will not be given.

**Short Exams:** There will be half an hour exams on Monday classes during 2\textsuperscript{nd}, 3\textsuperscript{rd}, 4\textsuperscript{th} week. These short exams replace the midterm.

**Course grade** will be determined by the following (tentative) scale:

Homework 15\%, Quiz 10\%, Short Exams \~30\%, Final \~45\%

This grade distribution is tentative. It will be adjusted at the end of the summer session II using averages of each category. All scores are available at the Canvas course site.

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**Exam Schedule**

**Short Exams:** 2\textsuperscript{nd}, 3\textsuperscript{rd}, 4\textsuperscript{th} Mondays, in class.
**Final Exam:** Friday August 30, in class, cumulative.

**Important Exam Policy:** No electronic devices, notebooks are allowed. You should keep your phones in your backpacks. If we see your phones near you during the exam, we may ask you to leave the classroom immediately and you may fail the class.

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**Lecture Schedule**

**Week 1** (July 29, 31, August 2): Chapter 1 and Chapter 2

**Week 2** (August 5, 7, 9): Chapter 3, Chapter 4, Quiz 1 on 8/5 in class.

**Week 3** (August 12, 14, 16): Chapter 4, Chapter 5, Quiz 2 on 8/12 in class

**Week 4** (August 19, 21, 23): Chapter 6, Chapter 7, Quiz 3 on 8/19 in class

**Week 5** (August 26, 28, 30): Chapter 7. **Final Exam: Friday August 30** in class, cumulative.

**Final Review Session:**
Assignments

**Chapter 1**: (Due 8/2) Section 2: 1, 2. Section 3: 1. Section 5: 1ab, 4, 5, 8, 9. Section 6: 1, 2, 10, 13, 15. Section 9: 1, 2, 4, 5, 9, 10, 11. Section 11: 1, 2, 4, 5, 7. Section 12: 1, 4.

**Chapter 2**: (Due 8/2) Section 14: 1, 2, 3, 9. Section 18: 1, 3, 5, 7. Section 20: 2, 3, 4, 6, 7, 8. Section 24: 1, 2, 3, 8. Section 26: 1, 2.

**Chapter 3**: (Due 8/9) Section 30: 1, 2, 3, 8, 10. Section 33: 2, 5, 6, 7, 8. Section 36: 1, 2. Section 38: 1, 2, 3, 4, 7. Section 39: 1, 2, 3, 4. Section 40: 2, 3, 4.

**Chapter 4**: (Due 8/9) Section 42: 1, 2, 3, 4. Section 43: 1, 2, 3, 4, 10, 13. Section 47: 1, 2, 4, 6. Section 49: 1, 2, 3.

**Chapter 4**: (Due 8/16) Section 53: 1, 2, 4, 5. Section 57: 1, 2, 3, 4, 5, 6. Section 59: 1, 2, 4, 5, 7.

**Chapter 5**: (Due 8/16) Section 61: 4. Section 65: 1, 2, 3, 5, 7, 8, 9, 10, 11. Section 68: 1, 2, 3, 4, 5.

**Chapter 6**: (Due 8/23) Section 72: 1, 2, 3, 4, 6. Section 73: 1, 2, 5, 6, 9. Section 77: 1, 2, 4, 7. Section 79: 1, 2. Section 81: 1, 3, 4, 5, 6. Section 83: 1, 5, 6.

**Chapter 7**: (Due 8/29 Note this is Thursday) Section 86: 2, 3, 5, 8, 9. Section 88: 2, 5, 7, 12. Section 91: 1, 2, 3, 5. Section 92: 1, 2, 3, 6.

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**DRC 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. If you have questions or concerns about exam accommodations or any other disability-related matter, please contact the DRC office, located in Hahn 125 or at 831-459-2089 or drc@ucsc.edu.

**Academic Dishonesty**: Academic integrity is the cornerstone of a university education. Academic dishonesty diminishes the university as an institution and all members of the university community. It tarnishes the value of a UCSC degree. All members of the UCSC community have an explicit responsibility to foster an environment of trust, honesty, fairness, respect, and responsibility. All members of the university community are expected to present as their original work only that which is truly their own. All members of the community are expected to report observed instances of cheating, plagiarism, and other forms of academic dishonesty in order to ensure that the integrity of
scholarship is valued and preserved at UCSC. In the event a student is found in violation of the UCSC Academic Integrity policy, he or she may face both academic sanctions imposed by the instructor of record and disciplinary sanctions imposed either by the provost of his or her college or the Academic Tribunal convened to hear the case. 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 Integrity page at the Division of Undergraduate Education.

**Title IX**: The university cherishes the free and open exchange of ideas and enlargement of knowledge. To maintain this freedom and openness requires objectivity, mutual trust, and confidence; it requires the absence of coercion, intimidation, or exploitation. The principal responsibility for maintaining these conditions must rest upon those members of the university community who exercise most authority and leadership: faculty, managers, and supervisors. The university has therefore instituted a number of measures designed to protect its community from sex discrimination, sexual harassment, sexual violence, and other related prohibited conduct. Information about the Title IX Office, the online reporting link, applicable campus resources, reporting responsibilities, the UC Policy on Sexual Violence and Sexual Harassment and the UC Santa Cruz Procedures for Reporting and Responding to Reports of Sexual Violence and Sexual Harassment can be found at titleix.ucsc.edu. The Title IX/Sexual Harassment Office is located at 105 Kerr Hall. In addition to the online reporting option, you can contact the Title IX Office by calling 831-459-2462.