

Course Syllabus

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 Edit

The University of Iowa
The College of Liberal Arts and Sciences

Spring 2024

Title of Course:

[MATH:4200:0001 \(https://myui.uiowa.edu/my-ui/courses/details.page?ci=149687&id=1024879\)](https://myui.uiowa.edu/my-ui/courses/details.page?ci=149687&id=1024879)

**Complex
Variables**

Lecture time and location: 10:30A - 11:20A MWF 210 MLH

<https://facilities.uiowa.edu/building/0023>

<https://facilities.uiowa.edu/building/0023>

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<https://facilities.uiowa.edu/building/0023>

Department of Mathematics: <https://math.uiowa.edu>  <https://math.uiowa.edu/>

Course ICON site: To access the course site, log into [Iowa Courses Online \(ICON\)](#) (<http://icon.uiowa.edu/index.shtml>) using your Hawk ID and password.

Course Home

For Undergraduate Courses: The College of Liberal Arts and Sciences (CLAS) is the home of this course, and CLAS governs the add and drop deadlines, the “second-grade only” option (SGO), academic misconduct policies, and other undergraduate policies and procedures. Other UI colleges may have different policies.

Instructors: Hao Fang

Office location: 25K MLH

Student drop-in hours: MWF 10:00-10:25, 1:30-1:55pm (Students are invited to drop by during these hours to discuss questions about the course material or concerns. I am also available by appointment.)

Phone: 319-335-0772

E-mail: hao-fang@uiowa.edu (<mailto:hao-fang@uiowa.edu>)

DEO: [Ryan Kinser](https://math.uiowa.edu/people/ryan-kinser) (<https://math.uiowa.edu/people/ryan-kinser>) ryan-kinser@uiowa.edu (<mailto:ryan-kinser@uiowa.edu>) **Office:** 14A MLH/25F MLH

Description of Course:

This course provides an introduction to theory of functions of a complex variable. Topics include complex numbers and related function theory, analytic functions and its related calculus, Laurent expansion, residues, and their applications.

Objectives and Goals of the Course:

This is a beginning course in complex variables and their applications. We will begin with the fundamentals, comparing the more familiar cases from calculus to the setting of complex functions: Analytic and harmonic functions, contour integrals, and integral representations. Applications include those to other areas of mathematics, and to physics, and engineering. Students are encouraged to do some proofs and computations independently.

Texts:

Complex Analysis by Bak and Newman, 3rd edition, Springer,
Chapter 1-12, 16.

Drop Deadline for this Course

You may drop an individual course before the deadline; after this deadline you will need collegiate approval. You can look up the [drop deadline for this course](https://registrar.uiowa.edu/course-deadlines) (<https://registrar.uiowa.edu/course-deadlines>) here. When you drop a course, a “W” will appear on your transcript. The mark of “W” is a neutral mark that does not affect your GPA. Directions for adding or dropping a course and other registration changes can be found on the [Registrar’s website](https://registrar.uiowa.edu/change-registration-myui) (<https://registrar.uiowa.edu/change-registration-myui>). Undergraduate students can find policies on dropping CLAS courses [here](https://clas.uiowa.edu/students/students-academic-policies/registration-policies#dropping) (<https://clas.uiowa.edu/students/students-academic-policies/registration-policies#dropping>). Graduate students should adhere to the [academic deadlines](https://grad.uiowa.edu/academics/deadlines) (<https://grad.uiowa.edu/academics/deadlines>) and policies set by the Graduate College.

Grading System and the Use of +/-:

This course uses the plus or minus grading system. Note that A+ grades are given only in extraordinary situations.

Final grades will be awarded based on the following minimal cutoffs:

A+ 97	B+ 80	C+ 65	D+ 45	F 30
A 90	B 75	C 55	D 40	
A- 85	B- 70	C- 50	D- 35	

Assignments and Percentage of Final Grade:

Weekly homework assignments are given on Fridays and collected on Wednesdays.

Course Grades

Final course grades will be assessed based on your performance in the following activities:

Weekly Homework/Quiz: 30%

1st Midterm Exam (Feb 21 Wednesday): 20%

2nd Midterm Exam (April 3 Wednesday): 20%

Final Exam: 30%

language for homework and quizzes: *Weekly homework will be assigned and collected and graded for completion and accuracy.* To ensure that students are completing the course readings and understanding the material, some quizzes will be given during the class time. They will evaluate key information presented in the course readings for the time covered by the quiz.

language for class participation: Regular and prompt attendance is strongly encouraged for this course. It is in your interest to attend every class and to arrive with significant contributions to make to discussions. Participation in this class includes making lists of issues for class discussion and giving prepared, oral responses to questions.

language for exams: Two exams of equal weight will be given. Each exam will cover material from approximately half of the course, including information presented in lecture, discussion section, and the assigned readings. The exams will test student's knowledge of basic concepts, terms, and general

trends discussed in the course. Study guides will be discussed in class before the exam. Suggested study techniques for the exam are for the student to complete all the suggested readings for the exam and then to use course notes, and readings to be sure that they are familiar with all the terms and concepts outlined in review sessions.

No makeup quizzes will be given. The lowest 3 homework/quiz scores will be dropped.

Date and Time of the Final Exam

The [final examination date and time \(https://registrar.uiowa.edu/final-exam-schedules\)](https://registrar.uiowa.edu/final-exam-schedules) will be announced by the Registrar generally by the fifth week of classes and it will be announced on the course ICON site once it is known. **Do not plan your end of the semester travel plans until the final exam schedule is made public. It is your responsibility to know the date, time, and place of the final exam.** According to Registrar's final exam policy, students **have a maximum of two weeks after the announced final exam schedule** to request a change if an exam conflict exists or if a student has more than two exams in one day (see the [policy \(https://registrar.uiowa.edu/makeup-final-examination-policies\)](https://registrar.uiowa.edu/makeup-final-examination-policies) here).

Academic Honesty and Misconduct

All students in CLAS courses are expected to abide by the [CLAS Code of Academic Honesty \(https://clas.uiowa.edu/students/handbook/academic-fraud-honor-code\)](https://clas.uiowa.edu/students/handbook/academic-fraud-honor-code). Undergraduate academic misconduct must be reported by instructors to CLAS according to [these procedures \(https://clas.uiowa.edu/faculty/undergraduate-teaching-policies-resources/academic-misconduct\)](https://clas.uiowa.edu/faculty/undergraduate-teaching-policies-resources/academic-misconduct). Graduate academic misconduct must be reported to the Graduate College according to Section F of the [Graduate College Manual \(https://grad.uiowa.edu/academics/manual/academic-program/section-iv-academic-standing-probation-and-dismissal\)](https://grad.uiowa.edu/academics/manual/academic-program/section-iv-academic-standing-probation-and-dismissal).

Calendar of Course Assignments and Exams

Homework problems is important to prepare for the quizzes (usually on Friday), which will be posted on ICON during the previous week. Students are encouraged to check ICON often during the semester.

We plan to cover roughly one chapter of the textbook for each week, with the exception for chapter 1, which will be covered for week 1 and 2. The class before the midterm and final exams will be review sessions.


Attendance and Absences

Students are asked to use the **absence form** in ICON under Student Tools.

University regulations require that students be allowed to make up examinations

<https://opsmanual.uiowa.edu/students/absences-class> that have been missed due to illness, religious holy days, military service obligations (including service-related medical appointments), or other unavoidable circumstances or University-sponsored activities. Students with UI-authorized activities must discuss their absences with the instructor as soon as possible. Religious obligations must be communicated within the first three weeks of classes.

Communication: UI Email

Students are responsible for all official correspondences sent to their UI email address (uiowa.edu  <http://uiowa.edu/>) and must use this address for any communication with instructors or staff in the UI community. For the privacy and the protection of student records, UI faculty and staff can only correspond with UI email addresses.

Where to Get Academic Support for this Course

Math Tutor Room in MLH 1st Floor. <https://math.uiowa.edu/math-tutorial-lab> 
<https://math.uiowa.edu/math-tutorial-lab>

Mental Health Resources and Student Support

Students are encouraged to be mindful of their mental health and seek help as a preventive measure or if feeling overwhelmed and/or struggling to meet course expectations. Students are encouraged to talk to their instructor for assistance with specific class-related concerns. For additional support and counseling, students are encouraged to contact University Counseling Service (UCS). Information about UCS, including resources and how to schedule an appointment, can be found at counseling.uiowa.edu (<http://counseling.uiowa.edu/>). Find out more about UI mental health services at mentalhealth.uiowa.edu (<http://mentalhealth.uiowa.edu/>).

Student Care and Assistance (<https://dos.uiowa.edu/assistance>) provides assistance to University of Iowa students who are experiencing a variety of crisis and emergency situations, including but not limited

to medical issues, family emergencies, unexpected challenges, and sourcing basic needs such as food and shelter. More information on the resources related to basic needs can be found at basicneeds.uiowa.edu/resources/ (<https://basicneeds.uiowa.edu/resources/>). Students are encouraged to contact Student Care & Assistance in the Office of the Dean of Students (Room 135 IMU, dos-assistance@uiowa.edu (<mailto:dos-assistance@uiowa.edu>), or 319-335-1162) for support and assistance with resources.

[University Policies](https://provost.uiowa.edu/student-course-policies) (<https://provost.uiowa.edu/student-course-policies>)

[Accommodations for Students with Disabilities](https://provost.uiowa.edu/teaching-resources/course-syllabi-information#accommodations-for-students-with-disabilities) (<https://provost.uiowa.edu/teaching-resources/course-syllabi-information#accommodations-for-students-with-disabilities>)

The University is committed to providing an educational experience that is accessible to all. If a student has a diagnosed disability or other disabling condition that may impact the student's ability to complete the course requirements as stated in the syllabus, the student may seek accommodations through [Student Disability Services](https://sds.studentlife.uiowa.edu/students/) (<https://sds.studentlife.uiowa.edu/students/>) (SDS). SDS is responsible for making Letters of Accommodation (LOA) available. **The student must provide an LOA to the instructor as early in the semester as possible, but requests not made at least two weeks prior to the scheduled activity for which an accommodation is sought may not be accommodated.** The LOA will specify what reasonable course accommodations the student is eligible for and those the instructor should provide. Additional information can be found on the [SDS website](https://sds.studentlife.uiowa.edu/students/apply) (<https://sds.studentlife.uiowa.edu/students/apply>).

[Free Speech and Expression](https://provost.uiowa.edu/teaching-resources/course-syllabi-information#free-speech-and-expression) (<https://provost.uiowa.edu/teaching-resources/course-syllabi-information#free-speech-and-expression>)

[Absences for Religious Holy Days](https://opsmanual.uiowa.edu/students/absences-class#8.2) (<https://opsmanual.uiowa.edu/students/absences-class#8.2>)

[Classroom Expectations](https://provost.uiowa.edu/teaching-resources/course-syllabi-information#classroom-expectations) (<https://provost.uiowa.edu/teaching-resources/course-syllabi-information#classroom-expectations>)

[Non-discrimination](https://provost.uiowa.edu/teaching-resources/course-syllabi-information#non-discrimination-statement) (<https://provost.uiowa.edu/teaching-resources/course-syllabi-information#non-discrimination-statement>)

[Sexual Harassment/Misconduct and Supportive Measures](https://provost.uiowa.edu/teaching-resources/course-syllabi-information#sexual-harassment--sexual-misconduct-and-supportive-measures) (<https://provost.uiowa.edu/teaching-resources/course-syllabi-information#sexual-harassment--sexual-misconduct-and-supportive-measures>)

[Sharing of Class Recordings](https://provost.uiowa.edu/teaching-resources/course-syllabi-information#sharing-of-class-recordings-if-appropriate) (<https://provost.uiowa.edu/teaching-resources/course-syllabi-information#sharing-of-class-recordings-if-appropriate>) (if appropriate)

Student Complaints

Students with a complaint about a grade or a related matter should first discuss the situation with the instructor and/or the course supervisor (if applicable), and finally with the Director or Chair of the school, department, or program offering the course.

Undergraduate students should contact [CLAS Undergraduate Programs](https://clas.uiowa.edu/undergraduate-programs) (<https://clas.uiowa.edu/students/handbook/student-rights-responsibilities#rights>) for support when the matter is not resolved at the previous level. Graduate students should contact the CLAS [Associate Dean for Graduate Education and Outreach and Engagement](https://clas.uiowa.edu/deans-office/christine-getz) (<https://clas.uiowa.edu/deans-office/christine-getz>) when additional support is needed.

Course Summary:

Date	Details	Due
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