

MATH*3260 Complex Analysis

Course Outline (Winter 2026)

University of Guelph

Instructor: Daniel Kraus

Office:

Email:

Office Hours: TBD

(feel free to email me to schedule alternate meetings)

Section 01

Class:

Prerequisite: MATH*2200 Advanced Calculus I

Restrictions: none

Credit Weight: 0.50

Academic Department: Mathematics & Statistics

Campus: Main

Semester Offering: Winter

1 Textbook & Course Notes:

- **Textbook:** *A First Course in Complex Analysis*, by Allan R. Willms. A digital version of this textbook is completely free to University of Guelph students via the library's website. The direct link is posted on CourseLink. **We will be covering topics from all 8 chapters.**
- **Course Notes:** Blank PDF slides have been prepared and will be posted to CourseLink.

2 Lectures:

All lectures will be in person.

3 What to Bring to Class:

- Your notes
- Blank paper, pens/pencils, highlighters

4 Teaching Assistant:

Email:

Office hours: TBA

5 Calendar Description:

This course extends calculus to cover functions of a complex variable; it introduces complex variable techniques which are very useful for mathematics, the physical sciences and engineering. Topics include complex differentiation, planar mappings, analytic and harmonic functions, contour integration, Taylor and Laurent series, the residue calculus and its application to the computation of trigonometric and improper integrals, conformal mapping and the Dirichlet problem.

6 Learning Outcomes:

Students in this course will learn the basic ideas and tools of complex analysis. Students will learn the arithmetic properties of the complex number plane and will learn how calculus generalizes to functions of a complex variable. Students will see how complex variables can be introduced to simplify certain purely real problems such as evaluating certain real improper integrals.

7 Homework:

Practice problems will be assigned throughout the semester. Hints or solutions for those will be posted to CourseLink. There will be 5 assignments throughout the semester, each accounting for 4% of the final grade. These assignments are to be written or typed out and handed in via Gradescope. **The plan is to have those due by 11:59pm on Jan. 16, Jan. 30, Feb. 27, Mar. 13, and Mar. 30.** Assignments will reflect the course learning outcomes listed above and will generally be a combination of calculations and application of theory and will require thought to complete. Please do not wait until the last minute!

Any missed marks on the assignments will be evenly distributed among the two midterm tests and the final exam. For example, if you score 25% on assignment 1, then your midterm tests and final exam will be worth 1% more each in the overall grading scheme.

8 Tests and Exam Times:

Midterm Tests and the Final Exam are based mainly on examples done in class and homework and will also reflect the learning outcomes in a similar way to the assignments.

- **Midterm Test 1: Week of Feb. 9, ???pm – ???pm, Room TBA**
- **Midterm Test 2: Week of Mar. 16, ???pm – ???pm, Room TBA**
- **Final Exam (cumulative): Thursday, April 9, 8:30am – 10:30am, Room TBA**

9 Grade Distribution

Assessment	Percentage
5 Assignments	20%
Midterm #1	20%
Midterm #2	20%
Final Exam	40%

10 Schedule:

Dates	Textbook Sections	Major Topics
Jan 5–9	1.1–1.3	Introduction, Exponentials, Polar Forms, Conjugation, Powers
Jan 12–16	1.3–1.5, 2.1–2.3	Sets, Functions, Lines/Circles ASSIGNMENT 1
Jan 19–23	2.4–2.5, 3.1–3.3	Visualizing, Derivatives, Cauchy-Riemann Equations
Jan 26–30	3.3–3.5	Analytic Functions, Singular Points ASSIGNMENT 2
Feb 2–6	3.5–3.6, 4.1	Riemann Surfaces, Arcs, Contours, Parametrizations
Feb 9–13	4.2, 5.1	Contour Integrals, Cauchy-Goursat Theorem MIDTERM 1 (Tentative)
Feb 16–20		WINTER BREAK
Feb 23–27	5.1–5.2	Cauchy Integral Formulas ASSIGNMENT 3
Mar 2–6	5.2–5.3, 6.1	Counting Zeros and Poles
Mar 9–13	6.1–6.4	Series (including Laurent) ASSIGNMENT 4
Mar 16–20	6.5, 7.1–7.2	Isolated Singularities, Residues MIDTERM 2 (Tentative)
Mar 23–27	7.2–7.3	Residue Theorem
Mar 30 – Apr 1	7.3	Calculation of Real Integrals ASSIGNMENT 5

11 Picking up Assessments

All assessments will be graded through Gradescope. Graded assignments and midterm test results will be viewable through that website.

12 The Math & Stats Learning Center:

The Mathematics & Statistics Department operates a learning center where you'll find a team of tutors that can help you understand and solve problems in MATH*3260. The learning center is located on the third floor of the McLaughlin Library in the Science Commons. The hours of operation are as follows:

Monday	Tuesday	Wednesday	Thursday	Friday
9:30-15:30	10:00-16:00	9:30-15:30	10:00-16:00	9:30-14:30

13 Outlines for the Midterms and Final Exam:

Posted in the Content section of CourseLink when those dates approach.

14 Practice Tests:

Posted in the Content section of CourseLink when the actual test dates approach.

15 Tests and Solutions for This Year:

Posted in the Content section of CourseLink after the midterms have been graded.

16 Attendance:

Formal attendance will not be taken. However, I *strongly* encourage you to attend class regularly. Scanned lecture notes will be posted to CourseLink at the end of each week.

17 Email Etiquette:

I try to respond to all email messages in a timely manner. Math questions may be better answered in person or via virtual meeting. Please keep your messages to the point and polite, and clearly state your question, with name, student ID, and course details.

18 Test/Exam policies:

- All tests/exams are **closed book**. You may not use your notes or any other outside material. Do not bring your own scratch paper.
- You are not allowed to use calculators, laptop computers, or cellphones during exams.
- The Final Exam is cumulative, i.e., it covers the whole course material.

19 Academic Consideration:

- There will be NO MAKE-UP MIDTERM TESTS OR ASSIGNMENTS. If you miss a midterm test due to serious illness of yourself or a death in your immediate family, or due to personal grounds, please contact me by email ASAP explaining the reason for missing the test. You do NOT need to get a doctor's note. If consideration is granted, I will readjust the weight of assessed material, as described in the next section. HOWEVER, ONCE YOU HAVE TAKEN A TEST, NO ACCOMMODATIONS WILL BE GRANTED (it is a general University of Guelph procedure to NOT grant

accommodations retroactively). For further details concerning Academic Consideration see <https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

- UNDER NO CIRCUMSTANCES WILL ANY TEST BE RE-SCHEDULED AT A DIFFERENT TIME AND/OR DATE FOR INDIVIDUAL STUDENTS, with the possible exception of exams taken in SAS.
- Athletes who compete away from the University of Guelph during a midterm exam can arrange for their coach to proctor their exam. Just get your coach to contact me, and we will make the arrangements.
- If you miss the final exam due to catastrophic events such as serious illness of yourself or death of your immediate family, you will receive an "Incomplete" grade, and then (depending on circumstance) you may be allowed to take a make-up exam to receive a letter grade. If you miss the final exam, you should (a) inform me by email, and (b) contact your program counsellor for advice.

20 Procedure Used to Re-Adjust the Weight of Assessed Material:

If consideration is given to miss a midterm test, the percentage of the missed test is moved to the final exam. Please **DO NOT ASK FOR ALTERNATE ARRANGEMENTS, AS FOR REASONS OF FAIRNESS TO OTHER STUDENTS, SUCH REQUESTS WILL NOT BE GRANTED.**

21 Regulations Regarding Seeing Your Final Exam:

If you wish to see your final exam, you must submit your **written** request to the chair of the department by the 5th class day of the new semester. For more details, see

https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/sec_d0e7195.shtml

If you are granted permission to see your final exam, you will be provided with your written solutions.

22 Regulations Regarding a Grade-Reassessment:

If you believe that an error has been made in the determination of your final grade then you must **write** to the chair of the department (by the 10th class day of the new semester) requesting a grade re-assessment. This can lead to the grade staying the same, a grade increase, or a grade decrease. Please note that this should not be used as a means of 'trying to get a few extra marks', but for situations where you have grounds for believing that mistakes have been made in the determination of your final grade. For further information, see

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

23 Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of

Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The [Academic Misconduct Policy](#) is outlined in the Undergraduate Calendar.

24 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability. Use of the SAS Exam Centre requires students to make a booking at least 10 days in advance, and no later than the first business day in November, March or July as appropriate for the semester. Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time. For students at the Guelph campus, information can be found on the [SAS website](#).

25 Academic Accommodation of Religious Obligations

If you are unable to meet an in-course requirement due to religious obligations, please email the course instructor within two weeks of the start of the semester to make alternate arrangements.

See the Academic calendar for information on regulations and procedures for [Academic Accommodations of Religious Obligations](#).

26 Copies of Out-of-Class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

27 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all undergraduate students except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in the [Undergraduate Calendar - Dropping Courses](#).

28 Email Communication

As per university regulations, all students are required to check their <uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

29 Health and Wellbeing

The University of Guelph provides a wide range of health and wellbeing services at the [Vaccarino Centre for Student Wellness](#). If you are concerned about your mental health and not sure where to start, connect with a [Student Wellness Navigator](#) who can help develop a plan to manage and support your mental health or check out our [mental wellbeing resources](#). The Student Wellness team are here to help and welcome the opportunity to connect with you.

30 Illness

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g., final exam or major assignment).

31 Recording of Materials

Presentations that are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

32 Resources

The [Academic Calendars](#) are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.

33 When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. See the Undergraduate Calendar for information on regulations and procedures for [Academic Consideration](#).