

**Faculty of Science Course Syllabus
Department of Mathematics & Statistics
MATH 3080: Introduction to Complex Variables
Winter 2018**

Instructor(s): Karl Dilcher dilcher@mathstat.dal.ca Chase 325

Lectures: Mondays, Tuesdays, Thursdays 1:35—2:25 pm, LSC 234

Office hours: MWF 10:00—11:00 am (subject to change), or by appointment

Course Description

An introduction to the basic elements of complex analysis. Topics include: complex numbers, functions, differentiation and integration in the complex plane, some special mappings, series in general, Taylor and Laurent Series, residues, some principles of conformal mapping theory.

Course Prerequisites

MATH 2002 or Instructor's permission.

Course Objectives/Learning Outcome

Students will gain a solid understanding of functions, especially analytic functions, of one complex variable, of power series, and complex contour integration with applications. This course will provide the necessary prerequisite for MATH 4020/5020: Analytic Function Theory.

Required Course Materials

- Course Notes: "Introduction to Complex Variables" (available in the Dalhousie Bookstore).
- Stephen D. Fisher, "Complex Variables", 2nd Ed., Dover Publications, 1999. (On reserve).

Course Content

1. Introduction
2. Complex Numbers
3. Complex Functions
4. Integration
5. Consequences of Cauchy's Theorem
6. Laurent Series and Singularities
7. Residues

Course Assessment

Component	Weight (% of final grade)	Date
<i>Midterm Test</i>	30%	TBA
<i>Final exam</i>	40%	(Scheduled by Registrar)
<i>Assignments</i>	30%	weekly

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

A+ (90-100)	B+ (77-79)	C+ (65-69)	D	(50-54)
A (85-89)	B (73-76)	C (60-64)	F	(<50)
A- (80-84)	B- (70-72)	C- (55-59)		

Course Policies

Late assignments will normally not be accepted. However, reasonable accommodations will be made in the case of special circumstances. Detailed guidelines and instructions concerning assignments will be posted on BrightSpace.

Smartphone policy

I request that you refrain from the use of your smartphone during class. The main reasons are:

- It is distracting to those sitting near you.
- "Multitasking" doesn't work, as studies have shown; you'll do poorly at both tasks.
- Concentration is absolutely essential in mathematics. Without the ability to concentrate you will not be able to go beyond a certain relatively low level.
- Please consider your classes (not just this one) as opportunities to practice concentrating on just one task.

Thank you for your consideration.

University Policies and Statements

This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate**Academic Integrity**

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.

Information: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility

The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia). **Information:** https://www.dal.ca/campus_life/academic-support/accessibility.html

Student Code of Conduct

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution.

Code: https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

Diversity and Inclusion – Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness

Statement: <http://www.dal.ca/cultureofrespect.html>

Recognition of Mi'kmaq Territory

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel and support. Visit or e-mail the Indigenous Student Centre (1321 Edward St) (elders@dal.ca).

Information: https://www.dal.ca/campus_life/communities/indigenous.html

Important Dates in the Academic Year (including add/drop dates)

https://www.dal.ca/academics/important_dates.html

University Grading Practices

https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html

Missed or Late Academic Requirements due to Student Absence (policy)

https://www.dal.ca/dept/university_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html

Student Resources and Support

Advising

General Advising https://www.dal.ca/campus_life/academic-support/advising.html

Science Program Advisors: <https://www.dal.ca/faculty/science/current-students/academic-advising.html>

Indigenous Student Centre: https://www.dal.ca/campus_life/communities/indigenous.html

Black Students Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html

International Centre: https://www.dal.ca/campus_life/international-centre/current-students.html

Academic supports

Library: <https://libraries.dal.ca/>

Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html

Studying for Success: https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

Copyright Office: <https://libraries.dal.ca/services/copyright-office.html>

Fair Dealing Guidelines <https://libraries.dal.ca/services/copyright-office/fair-dealing.html>

Other supports and services

Student Health & Wellness Centre: https://www.dal.ca/campus_life/health-and-wellness/services-support/student-health-and-wellness.html

Student Advocacy: <https://dsu.ca/dsas>



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Ombudsperson: [https://www.dal.ca/campus life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html](https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html)

Scent-Free Program: <https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html>