

**MATH 466 (MAST 665/837), Sec. B**  
Complex Analysis II  
*Fall 2022*

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**Office Hours:** \_\_\_\_\_

**Textbook:** *Complex Analysis*, Elias M. Stein & Rami Shakarchi, Princeton University Press, 2003.  
[https://www.fing.edu.uy/~cerminar/Complex\\_Analysis.pdf](https://www.fing.edu.uy/~cerminar/Complex_Analysis.pdf)

**Recommended Supplementary Texts:**

1. L. V. Ahlfors. *Complex Analysis*:  
<http://people.math.gatech.edu/~mccuan/courses/6321/lars-ahlfors-complex-analysis-third-edition-mcgraw-hill-science-engineering-math-1979.pdf>
2. H.M. Farkas and I. Kra "*Riemann Surfaces*" (Springer Graduate Texts in Mathematics, 2nd Edition, 1992).

**Topics:**

1. Holomorphic functions. Cauchy Theorem. Open mapping maximum modulus principle.
2. Meromorphic functions. Laurent series. Method of residues. The argument principle.
3. Riemann mapping theorem. Analytic continuation.
4. Riemann surfaces. Basic examples.
5. Function Theory on Tori: Periodic meromorphic functions. Elliptic functions: Weierstrass' and Jacobi's theories.
6. (*As time permits*) Algebraic curves of higher genus. Holomorphic differentials. The Abel map and Abel's theorem. Theta functions and Jacobi inversion problem.

<b>Evaluation:</b>	Problem sets	50%
	Take home final	50%

If the grading scheme for this course includes graded assignments, a reasonable and representative subset of each assignment may be graded. Students will not be told in advance which subset of the assigned problems will be marked and should therefore attempt all assigned problems.

### **Academic Integrity and the Academic Code of Conduct**

This course is governed by Concordia University's policies on Academic Integrity and the Academic Code of Conduct as set forth in the Undergraduate Calendar and the Graduate Calendar. Students are expected to familiarize themselves with these policies and conduct themselves accordingly. "Concordia University has several resources available to students to better understand and uphold academic integrity. Concordia's website on academic integrity can be found at the following address, which also includes links to each Faculty and the School of Graduate Studies: <https://www.concordia.ca/conduct/academic-integrity.html>" [*Undergraduate Calendar, Sec 17.10.2*]

### **Behaviour**

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### **Use of Zoom**

**Note: Zoom is included as an institutionally-approved technology. This means we have been assured of the privacy protections needed to use freely within the classroom.**

Zoom might be used in this course to facilitate learning at a distance. It may be used to record some or all of the lectures and/or other activities in this course. If you wish to ensure that your image is not recorded, speak to your instructor as soon as possible.

Also, please note that you may not share recordings of your classes and that the instructor will only share class recordings for the purpose of course delivery and development. Any other sharing may be in violation of the law and applicable University policies, and may be subject to penalties.

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### **Extraordinary circumstances**

In the event of extraordinary circumstances and pursuant to the [Academic Regulations](#) the University may modify the delivery, content, structure, forum, location and/or evaluation scheme. In the event of such extraordinary circumstances, students will be informed of the change.