

# Complex Analysis

## Math 440/508

### 2013 W Term 1 September

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**Description:** The course will provide an introduction to Complex Analysis. We will also discuss applications to other fields, such as number theory.

**Textbook:**

- *Complex Analysis* by Elias M. Stein and Rami Shakarchi. The textbook is available at UBC library.

**Instructor:** Akos Magyar, Phone: 822-3045, Email: magyar@math.ubc.ca

**Office hours:** MWF 12-1pm at Math 229E

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**Prerequisite:** Math 300 (or equivalent) and a score of 68% or higher in Math 320.

**Course outline:**

1. The residue theorem
2. The argument principle
3. Conformal mapping
4. The maximum modulus principle
5. Harmonic functions
6. Representations of functions by series and products
7. Applications to number theory

The core topics are contained in Chapters 1, 2, 3 and 8 of the textbook. Time permitting we will also consider other topics.

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**Lectures:** Monday, Wednesday, Friday 11am - 12 pm in Math Annex 1118

**Grading Policy:** Homework problems will be posted regularly on the course website. In addition, there will be a take home midterm and a take home final. Your total score will be a weighted average of your homework, midterm and final scores, with the breakdown as follows.

**Homework:** 50%  
**Midterm:** 25%  
**Final exam:** 25%

**Homework Assignments:** There will be bi-weekly homework assignments.

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**Midterm:** Starting Friday October 18th.

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**Further Recommended Texts:**

- Walter Rudin: *Real and Complex Analysis*
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