Course Staff

Name	E-mail	Office Hours
Dr. Jaimal Thind (Instructor)	jthind@math.utoronto.ca	Tu 4 & Th 7
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Course Description

This is a course in functions of one complex variable, specifically analytic and meromorphic functions. We will cover Basics of Complex Functions, Differentiability, Cauchy's Theorem, Residues, Conformal Maps, Harmonic Functions and Basics of Analytic Continuation.

This course has several prerequisites: MAT 223/240, MAT 235/237. You are expected to be familiar with this material, since it will be needed for this course. Please take some time to review it, if necessary.

Textbook. *Complex Variables*, 2nd Edition, by Fisher. (Dover 1999)

Course Website. You can access the MAT 334 course website through the University of Toronto Portal (https://portal.utoronto.ca/). After logging in, click on the course title under My Courses to enter the website. Homework assignments, messages, handouts and other important information will be posted on the website, so you should check it regularly. You will also be able to see your marks for the quizzes, homework assignments and term tests online.

Office Hours. Please do not be hesitant to come ask us for help. The staff of MAT 334 are available for extra help outside of class, during our scheduled office hours (see above for dates/times).

In addition to these hours, before tests and exams we will hold extra office hours. The times and locations of these hours will be posted on the course webpage. If you cannot make any of the scheduled office hours, please let the instructor know, and hopefully an alternate meeting can be arranged.

Please note that the TA's office hours will not be held in their offices. Instead, they will be held in the TA consultation room in the Department of Mathematics, which is located on the 6th Floor of Bahen (BA 6283).

Marking Scheme

Your final grade will be determined as follows:

Homework (4 @ 5 %)	20 %
Quizzes (2 @ 5 %)	10 %
Term Tests (2 @ 15 %)	30 %
Final Exam	40 %
Course Grade	100 %

Homework Assignments

- There will be **FOUR Homework Assignments** given throughout the course which will cover the recent material from lectures. These are designed help you understand the course material. They also serve as good practice for the term test, and the final exam.
- You are expected to work on the questions assigned, and if you cannot solve a problem, you should ask your TA and/or the instructor for help understanding the relevant material.
- You may discuss the problems on the homework with your fellow students while working on the assignments.
  However*, the writing of your assignment must be done without any assistance whatsoever**. You ***must list the people you worked with on the top of your assignment. Failure to do so is considered an academic offence.
- We will also post a list of additional "Practice Problems" for you to work on. These are not to be submitted, but are there to provide you with additional practice, and to help you prepare for the test and exam.

Quizzes and Term Tests

- There will be **TWO quizzes** and **TWO term tests**. Please see the schedule below for the dates and times of the tests and quizzes. More details about the term test and the quizzes will be posted on the course website later. You **must** bring your student card to each quiz and term test.
- (Missing a Term Test or Quiz) If you cannot show up for a test or quiz because of illness or any other special reason, you should declare your absence on ROSI and submit your documentation

to the instructor no later than one week after the day of the test. Please use the relevant forms for your documentation. For medical notes, you MUST use the official U of T medical certificate, which can be downloaded from the course website.

- There will be NO make-up tests or quizzes. The marking scheme will be adjusted accordingly for students who have missed a test or quiz because of illness or any other (approved) legitimate reason.

Final Exam

The final exam of the course will take place during the examination period in August (August 13-16), and will be 3 hours long. It will cover all the material presented in lectures.

Code of Behaviour / Plagiarism

Students should become familiar with, and are expected to adhere to, the Code of Behaviour on Academic Matters which can be found in the U of T Calendar, or at:

`http://www.governingcouncil.utoronto.ca/policies/behaveac.htm`

More links concerning academic integrity to familiarize yourself with:

`http://www.artsci.utoronto.ca/osai` (Office of Student Academic Integrity)

`http://www.utoronto.ca/academicintegrity/` (Academic Honesty)

`http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize`
(Advice on avoiding plagiarism)

We will now repeat ourselves: You may discuss problems in the assignments with other students. However, you must write up your assignment *by yourself!* You must also list the people you worked with on the front page of your assignment.

Course Outline

The following is a rough outline of the material which will be covered throughout the semester.

Week	Dates	Sections	Topics
1	May 13 - 15	1.1–1.3	Basics of Complex Numbers and The Topology of the Plane
2	May 20 - 22	1.4–1.5	Limits, The Exponential, Logarithmic and Trigonometric Functions **HW#1** due May 22 (in class)
3	May 27 - 29	1.6	Line Integrals and Green's Theorem **Q#1** (in tutorial)
4	June 3 - 5	2.1, 2.2	Analytic and Harmonic Functions, Power Series
5	June 10 - 12	2.3	Cauchy's Theorem and Cauchy's Formula **HW#2** due June 12 (in class)
6	June 17 - 19	2.4	Consequences of Cauchy's Formula
	Week of June 23		**TERM TEST #1** Date TBA
7	July 3	2.5	Singularities **No class July 1**
8	July 8 - 10	2.6	Residue Theorem, Application of Residue Theorem: Definite Integrals **Q#2** (in tutorial)
9	July 15 - 17	3.1, 3.2	Zeroes of Analytic Functions, Maximum Modulus Principle **HW#3** due July 17 (in class)
10	July 22 - 24	3.3	Fractional Linear Transformations **TERM TEST #2** July 22, 6.15 - 7.45 pm
11	July 29 - 31	3.3, 3.4	Fractional Linear Transformations & Conformal Maps
12	August 5 - 7	4.1	Harmonic Functions **HW#4** due August 7 (in class)
	August 12	4.1	Catchup and Review (make up day for July 1)