

## MATH 3124A/9024A COMPLEX ANALYSIS I, FALL 2020 COURSE OUTLINE

**Prerequisite:** Math 2122A/B, **Antirequisite:** Math 3811A/B

**Course content:** Cauchy-Riemann equations, elementary functions, branches of the logarithm and argument, Cauchy's integral theorem and formula, winding number, Liouville's theorem and the fundamental theorem of algebra, the identity theorem, the maximum modulus theorem, Taylor and Laurent expansions, isolated singularities, the residue theorem and applications, the argument principle and applications.

**Instructor:** Artour Tomberg, atomberg@uwo.ca

**Tentative mode of delivery:** Live Zoom virtual lectures according to the schedule: MWF 2:30-3:30 PM. In case of technical or other difficulties, the mode of delivery may change to pre-recorded lectures.

**Office hours:** After every lecture, I will keep the Zoom session active in case there are students who have questions and want to have a discussion. If you want to discuss with me in private, please write me an email and we'll set up an appointment.

**Textbook:** J. Bak and D. Newman, "Complex Analysis", Springer-Verlag. Electronic copy available from the library catalogue:

<https://proxy1.lib.uwo.ca/login?url=https://link.springer.com/10.1007/978-1-4419-7288-0>

Another good book is T. Gamelin, "Complex Analysis", Springer-Verlag.

**Course website:** <https://owl.uwo.ca/portal/site/fd35192f-ca8b-4495-b233-b31f1c3d20aa>

All course material will be posted to OWL.

**Marking scheme:** 32% homework assignments + 32% midterm + 36% final exam  
There will be 6 homework assignments (see tentative schedule on the next page). The exact date and time of the midterm and the final exam will be communicated as soon as they are scheduled by the Registrar's Office. Both the midterm and the final exam will be online and will be invigilated through Zoom.

**Technical requirements:** Students are required to have a scanning device in order to be able to scan and submit the completed homework assignments, midterm and final exam. It could be a smartphone for example, but the resolution must be high enough for the marker to be able to read the handwriting. A web camera is required for the midterm and final exam for invigilation purposes.

**Official email policy:** In accordance with policy, the centrally administered email account provided to students will be considered the individual's official university email address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner.

### Tentative schedule of assessments

|              | Date and details                               |
|--------------|--|
| Assignment 1 | Given out September 23, due October 2          |
| Assignment 2 | Given out October 5, due October 14            |
| Assignment 3 | Given out October 16, due October 26           |
| Midterm      | 2 hours long, sometime between Oct. 26–Nov. 1  |
| Assignment 4 | Given out October 30, due November 13          |
| Assignment 5 | Given out November 16, due November 25         |
| Assignment 6 | Given out November 27, due December 7          |
| Final exam   | 3 hours long, sometime between Dec. 11–Dec. 22 |

**For 9024 students:** Students enrolled in Math 9024A will be assigned additional problems on the homework assignments.

**Lecture recording:** All of the remote learning sessions for this course will be recorded. The data captured during these recordings may include your image, voice recordings, chat logs and personal identifiers (name displayed on the screen). The recordings will be used for educational purposes related to this course, including evaluations. The recordings may be disclosed to other individuals participating in the course for their private or group study purposes. Please contact the instructor if you have any concerns related to session recordings. Participants in this course are not permitted to record the sessions, except where recording is an approved accommodation, or the participant has the prior written permission of the instructor.

**Test invigilation:** Tests and examinations in this course will be conducted using Zoom. You will be required to keep your camera on for the entire session, hold up your student card for identification purposes, and share your screen with the invigilator if asked to do so at any time during the exam. The exam session will not be recorded.\* More information about the use of Zoom for exam invigilation is available in the Online Proctoring Guidelines at the following link:

<https://www.uwo.ca/univsec/pdf/onlineproctorguidelines.pdf>

Completion of this course will require you to have a reliable internet connection and a device that meets the system requirements for Zoom. Information about the system requirements are available at the following link: <https://support.zoom.us/hc/en-us>

\* Please note that Zoom servers are located outside Canada. If you would prefer to use only your first name or a nickname to login to Zoom, please provide this information to the instructor in advance of the test or examination.

**Absence/missed work:** If you are unable to meet a course requirement due to illness or other serious circumstances, you must seek approval for the absence as soon as possible. Note that, in the case of our midterm, a self-reporting absence does not apply as the midterm is worth more than 30%, and approval can only be granted via the Dean's Office/Academic Counselling unit of your Home Faculty by providing a valid Student Medical Certificate if the absence is medical, or other appropriate documentation. For the full policy on Academic Consideration for Student Absences - Undergraduate Students in First Entry Programs, see:

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/Academic\\_Consideration\\_for\\_absences.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.pdf)

Students who cannot complete an assignment on time for a valid reason will be given an extension. In case of an approved absence for the midterm, a make-up test or a weight shift to the final exam may be offered. Students who miss the final exam and receive accommodation from Academic Counselling will be writing the Special Exam. You may also be eligible to write the Special Exam if you are in a “Multiple Exam Situation” (see [http://www.registrar.uwo.ca/examinations/exam\\_schedule.html](http://www.registrar.uwo.ca/examinations/exam_schedule.html)).

Students should consult the University’s list of recognized religious holidays, and should give reasonable notice in writing, prior to the holiday, to the Instructor and an Academic Counsellor if their course requirements will be affected by a religious observance. Additional information is given in the Western Multicultural Calendar: <https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>

**Senate policy on prerequisites:** Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

**Statement on academic offences:** Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site: [http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_undergrad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf)

**Accommodation policies:** Students with disabilities work with Accessible Education (formerly SSD) which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The Academic Accommodation for Students with Disabilities policy can be found at: [https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/AcademicAccommodation\\_disabilities.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/AcademicAccommodation_disabilities.pdf)

**Support services:** The website for Registrarial Services is: <http://www.registrar.uwo.ca> Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on add/drop courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: <https://www.uwo.ca/sci/counselling/>

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Student Accessibility Services (SAS) at (519) 661-2147 if you have any questions regarding accommodations.

Western University is committed to a thriving campus as we deliver our courses in the mixed model of both virtual and face-to-face formats. We encourage you to check out the Digital Student Experience website to manage your academics and well-being: <https://www.uwo.ca/se/digital/>

Students who are in emotional/mental distress should refer to Mental Health @ Western ([http://www.health.uwo.ca/mental\\_health](http://www.health.uwo.ca/mental_health)) for a complete list of options about how to obtain help.

Additional student-run support services are offered by the USC, <http://westernusc.ca/services>.