

Course Syllabus

Course Information:

Course catalog number: 435
Course Name: Introduction to Complex Analysis
Section Number: 100
Semester: Spring 2020
Meeting Times: Mondays & Thursdays, 11:00 AM – 12:15 PM
Meeting Location: Meen 117

Instructor Information:

Name: Dr. Kellen Myers
Office: Meen Center, Room 108E
Office Hours: Mondays & Thursdays 2:00 – 4:30 PM
E-mail: kmyers@tusculum.edu or kellenmyers@gmail.com
Website: <http://www.kellenmyers.org/teaching/>

Course Overview:

Textbook: Complex Variables and Applications by Brown & Churchill
Prerequisites: MATH 295 (C- or better)
Co-requisites: none

Course Description:

This course gives an introduction to the theory of functions of one complex variable. Central themes in the course are analytic and harmonic functions and their properties, power series and Laurent series, isolated singularities, Cauchy's integral theorem and residue calculus, the maximum principles, Schwarz lemma, and conformal mappings.

Learning Outcomes:

General Education Outcomes – none

Programmatic Outcomes – none

Course Outcomes

- Students will be familiar with basic definitions and forms of complex numbers, functions of complex numbers, and the geometry of the complex plane.
- Students will perform the basic calculus of complex functions, including derivatives, indefinite integrals, and contour integrals, using methods adapted from real calculus, including the Cauchy-Riemann equations.
- Students will be able to identify and describe zeroes, poles, branches, and other singularities of complex functions, and to identify analytic functions.
- Students will be able to state, define, and apply Taylor's theorem, Laurent series, Cauchy's integral formula, Liouville's theorem, the Cauchy-Goursat theorem, and Cauchy's residue theorem.

Course outcomes will be variously assessed by all assignments.

Course Assignments

Assignments will include the following four categories:

- In-class work: Short activities, quizzes, etc. during class. Most of these activities will be graded for completion or participation, rather than for correctness, and together comprise 10% of overall course grades.
- Problem sets: Serious chapter-by-chapter assignments, comprising the major learning experience of this course. These exercises provide students with the chance to learn, practice, and master course material. Collaboration and the use of resources (textbook, office hours, etc.) are encouraged, but students are expected to prepare their own solutions, the final version of which should be written independently. Problem sets will all together comprise 40% of overall course grades.
- Exams: There will be four exams, three mid-term exams and one final. The course material is extremely interconnected, so students should assume every exam will be, to some extent, comprehensive. However, the final exam is explicitly comprehensive, and will seek to directly assess all course material. The midterm exams will focus mainly on material covered since the previous midterm. Each exam may be entirely in-class, entirely “take home,” or a mix of the two. Mid-term exams will each comprise 10% of overall course grades, and the final exam will be 20%.

*Note: As mentioned below, academic integrity is one of our core principles. **Students are not permitted to collaborate on take-home exams.** If evidence of unauthorized collaboration or the use of unauthorized resources is found, a student is subject to sanctions, including but not limited to, immediate dismissal from the course with a failing grade.*

Grading Scale

Letter grades will be assigned on the average of students’ work, in the proportions indicated above. There is no official Tusculum University grading scale. Students will receive grades no lower than the standard grading scale: Above 93%: A; Above 90%: A-; Above 87%: B+; Above 83% B; Above 80%: B-; Above 77%: C+; Above 73% C; Above 70%: C-; Above 67%: D+; Above 60%: D; Otherwise: F. Students may receive grades higher than this, depending on the relationship between numerical grades and demonstration of achievement and mastery of learning outcomes.

Course Outline and Materials

The course outline, including day-by-day information, supplemental or optional readings, etc. will be on the course website, which can be found at <http://www.kellenmyers.org/teaching/>. Some documents will be posted as the term progresses, while others will be posted when first available. This website will also link to various documents, policies, and other information related to this course. Any major changes to the course schedule will be announced.

Final Exam

A final exam is a required part of this course; students must take the final in order to pass the course. Final exams are administered only during three days of Final Exam Week and may not be taken early for any reason. Consult the syllabus and the Tusculum website to determine when your exams will take place and do not make travel, family, or any other plans that conflict with any of your final exams. If you see that there will be an unavoidable conflict, drop this course before the Add/Drop period concludes and sign up for a different section.

Other Policies

Attendance: Attending class meetings is mandatory. Math courses often include a substantial amount of in-class work. Failure to attend class meetings will likely result lower grades and will leave you falling behind the class.

Computing: You may be asked throughout the semester to complete certain assignments using a

computer, calculator, or other technology. In other instances, you will be expected to complete assignments without these resources. Be sure to follow such instructions.

Email: Students are required to regularly check email for messages regarding this course. Students should feel free to contact the instructor by email with any questions or concerns.

Academic Integrity: Do not cheat. This includes copying solutions from the Internet or a classmate. This is absolutely non-negotiable. University policy mandates that **even a first offense will result in automatic failure of the course.**

Getting Help: Email me, come to office hours, and seek study-help resources on campus. There are many resources to help you succeed, and I want you to find them if you need them because I want you to succeed. If you are falling too far behind and/or have been repeatedly absent, consult a dean or advisor.

Note: *This syllabus includes information specific to this course, policies that apply widely, and references to supplemental sources of information (mostly online). It is not an exhaustive list of all information students might need. Additional information is available on the University's website, the instructor's website, course management systems (e.g. Moodle), and/or updates to this document. When in doubt, please contact the instructor.*

General Policies for Tusculum University Courses

Minimum Grade Policy for A Course to Count Toward a Major or Minor:

Grades below 'C-' earned in the student's major and minor will satisfy the course prerequisites requirement; however, grades below 'C-' cannot be counted in the total number of hours required in the major and minor." In some majors, such as Nursing, the minimum acceptable grade is a "C" for some courses.

Tusculum Communication Policy:

All students are responsible for checking their personal Tusculum University email account each day, as it is the university's only official communication tool.

Plagiarism and Academic Dishonesty Policy:

Cheating and plagiarism are violations of Ethics of Social Responsibility—one of the outcomes that has been identified as essential to the Civic Arts. Plagiarism is a form of academic dishonesty. It consists of knowingly presenting in writing or in speech the intellectual or creative work of others as if it were one's own. This includes:

- Failing to identify direct or word-for-word quotations by use of appropriate symbols and reference to the source.
- Restating in your own words the work (ideas, conclusions, words) of another without reference to the source.
- Presenting as your own the creative work (for instance, music or photographs) of another without proper acknowledgment. Besides plagiarism, other forms of academic dishonesty include the following:
- Submitting the same work in two or more courses without significant modifications or expansion and without the approval of the instructors involved.
- Submitting purchased, borrowed, copied or specially commissioned work as if it were one's own.
- Knowingly permitting others to submit your work under their names.
- Copying the work of others during an examination or other academic exercise.
- Knowingly allowing others to copy your work during an examination or other academic exercise.
- Using "cheat sheets" or any other unauthorized form of assistance during an exam, quiz or other academic exercise.
- Manipulating or fabricating data to support erroneous conclusions.

Policy On Academic Accommodations and Students with Disabilities:

Tusculum University makes available to qualified students with disabilities those reasonable accommodations or services as are necessary to provide such students with unrestricted access to the learning environment and the opportunity

to demonstrate academic achievement. In order to procure services or classroom accommodations, the qualified student is responsible for self-identifying and directing all requests or accommodations or services to the Academic Resource Center counselors. Contact information: Counseling and ADA Services, 423-6367300, ext. 5402; counselingandadaservices@tusculum.edu; Room 233, Garland Library.

Availability of Tutoring:

Free tutoring services are provided by Tusculum University. The campus Tutoring Center is located in the Garland Library on the Greeneville campus. Tutoring is available in English and Mathematics, including Statistics, in the Tutoring Center, Rooms 317-318, 9:00 AM – 5:00 PM, Monday through Friday. For all other subjects, sign in at the Garland Library Circulation Desk (Main Floor/2nd floor), 7:00 PM – 9 PM, Sunday through Thursday. Tutoring is available during the stated hours on a walk-in basis, and you can also schedule an appointment by emailing tutoring@tusculum.edu. In some circumstances, written approval to meet in other public locations can be obtained from the Tutor Coordinator. Please note that the faculty reserves the right to require students to attend tutoring sessions.

Statement on Title IX:

Tusculum University is committed to providing a safe learning environment that is free of all forms of sex and gender-based discrimination and harassment, including sexual assault, intimate partner violence, and stalking. If you or someone you know has experienced any form of sexual misconduct, you are strongly encouraged (but not required) to contact the Title IX Co-Coordinators at (423) 636-7318 or email either of them: jgresham@tusculum.edu or mcooney@tusculum.edu. Please note that all Tusculum University faculty members are considered “responsible employees,” meaning any situation involving sex or gender-based discrimination shared with faculty must be reported to the Title IX Co-Coordinators. If you wish to speak with someone confidentially, contact Dr. Michell Temple (Garland Library 233; tel. 423-636-7402; counselingandadaservices@tusculum.edu). For more information regarding Title IX reporting options and links to available resources, please visit [Tusculum Title IX Website](#).

Inclement Weather Policy:

When Tusculum University classes are cancelled due to inclement weather, students will receive direction on how to complete scheduled and assigned activities on the Moodle site. In the case of inclement weather and the University is not closed, students and faculty are to exercise good judgment concerning personal safety related to traveling. If the University does not close and students miss class, they are responsible for contacting the course instructor prior to the class. Tusculum University will post information regarding closings or changes in

the schedule on the home page of the university website, as well as to the Tusculum Facebook page and the Twitter feed. All students are encouraged to sign up for the Pioneer Alert system by following the instructions at [Tusculum Inclement Weather Policy Website](#).

Statement on Student Veterans:

For information on support provided by Tusculum to veterans, contact Dale Laney, Director of Veteran Services, 121 Garland Library, tel. 423-636-7371, or dlaney@tusculum.edu.

Tusculum University's Mission, Vision, and University Values:

Mission Statement: Tusculum University provides a comprehensive education in a Judeo-Christian environment, grounded in a civic, liberal, and medical arts curriculum with pathways for career preparation, personal development and civic engagement.

Vision Statement: Tusculum strives to actualize educational excellence and ongoing relevance through our third century by:

- Establishing transformative living and learning communities
- Reflecting institutional integrity through aspirational leadership and academic innovation
- Distinguishing Tusculum University alumni as leading citizen-scholars
- Maximizing individual, group, and community fiscal support and partnerships to promote innovation.

University Values:

- **Integrity:** Encompassing honesty and trustworthiness, all members of the Tusculum University Community value and live with integrity, respect and virtue in communications, relationships and actions.
- **Education:** We value a balanced education grounded in the civic and liberal arts and career preparedness. Our goal is for students to develop practical wisdom, global literacy, critical and independent thinking, and an appreciation for life-long learning, diversity and inclusion.
- **Civic Responsibility:** We value our unique heritage in the civic arts and the Judeo-Christian tradition, and seek to develop citizen-scholars who will serve their communities throughout the world. We develop students as leaders who problem solve with reflective judgment.