

Math 421. Complex Analysis

AUTUMN, 2022

When and Where: Mon., Wed., and Fr., 9:05 - 9:55 pm, Heath and Human Dev. 353.

Course Web page: www.reluga.org/421

Instructor: Associate Professor Timothy Reluga, treluga@psu.edu

Office: 424 McAllister, 814-865-3883

Office hours: Friday, 2-3 or email to arrange an alternative

Official Course Description: Algebra and geometry of complex numbers; analytic functions; integration; power series; infinite sequences and series; residue calculus; conformal mapping, applications.

Prerequisite: (MATH 230 or 232 or 405) and (MATH 401 or 403) I expect you to know vector and matrix algebra, vector calculus, ordinary differential equations, basic real analysis, and be familiar with the concept of a partial differential equation.

Grading: Grades will be awarded based on homework assignments (20%), quizzes (20%), a midterm exam (20%), a term project (10%), and a final exam (30%). Course grades will be assigned out of 100 points as follows:

A 100-93 A- 93-90 B+ 90-87 B 87-83

B- 83-80 C+ 80-77 C 77-70 D 70-60 F 60-0

Required Textbooks: Introduction to Complex Analysis by H. A. Priestley

Homework: Homework will be collected in class on the first day of class each week, and be graded for completion (*not* correctness!).

Quizzes: 8 quizzes will be given over the semester on the first day of the week. These quizzes may be completed in class or handed in the next class, at my discretion. Quizzes are here to make sure you understood the home and recent material.

Exams: The midterm exam is tentatively scheduled for October 14th, but this is subject to change, depending on our progress through the course material. The date and time of the final will be announced.

Term project:

After the midterm exam, you will be required to complete a term project. Your project will require a 15 minute video, and a corresponding write-up, along with peer evaluation. Details to come.

Course goals and objectives:

The goal of this course is to learn about complex numbers and their uses, and develop the familiarity necessary to make use of complex analysis in future studies and applications. Specific objectives are summarized by our textbook table of contents.

Academic Integrity:

Academic integrity is the pursuit of scholarly activity in an open, honest and responsible manner. Academic integrity is a basic guiding principle for all academic activity at The Pennsylvania State University, and all members of the University community are expected to act in accordance with this principle. Consistent with this expectation, the University's Code of Conduct states that all students should act with personal integrity, respect other students dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts.

Academic integrity includes a commitment by all members of the University community not to engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of

dishonesty violate the fundamental ethical principles of the University community and compromise the worth of work completed by others.

All Penn State and Eberly College of Science policies regarding academic integrity apply to this course. For details, see

<http://www.science.psu.edu/academic/Integrity/index.html>

Disability Accommodation:

In order to receive consideration for reasonable accommodations, you must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: See documentation guidelines (<http://equity.psu.edu/sdr/guidelines>). If the documentation supports your request for reasonable accommodations, your campus disability services office will provide you with an accommodation letter. Please share this letter with your instructors and discuss the accommodations with them as early as possible. You must follow this process for every semester that you request accommodations. For further information, please visit <http://equity.psu.edu/sdr/>.

Counseling services:

Many students at Penn State face personal challenges or have psychological needs that may interfere with their academic progress, social development, or emotional wellbeing. The university offers a variety of confidential services to help you through difficult times, including individual and group counseling, crisis intervention, consultations, online chats, and mental health screenings. These services are provided by staff who welcome all students and embrace a philosophy respectful of clients cultural and religious backgrounds, and sensitive to differences in race, ability, gender identity and sexual orientation.

- Counseling and Psychological Services at University Park (CAPS) (<http://studentaffairs.psu.edu/counseling/>): 814-863-0395
- Counseling and Psychological Services at Commonwealth Campuses (<http://senate.psu.edu/faculty/counseling-services-at-commonwealth-campuses/>)
- Penn State Crisis Line (24 hours/7 days/week): 877-229-6400
- Crisis Text Line (24 hours/7 days/week): Text LIONS to 741741

Educational Equity and Bias Reporting:

Penn State seeks to foster a diverse and inclusive environment for students, faculty, and staff. Acts of intolerance, discrimination, or harassment due to age, ancestry, color, disability, gender, gender identity, national origin, race, religious belief, sexual orientation, or veteran status are not tolerated and can be reported through Educational Equity via the Report Bias page (<http://equity.psu.edu/reportbias/>).

Syllabus Subject to Change:

I reserve the right to amend this syllabus at any time during the semester, as I deem necessary to enhance learning in the class, or accommodate unforeseen circumstances. If I make any such modifications, they will be communicated to you in class and posted to the course web page.