MAT 342: Applied Complex Analysis

Spring 2019
Department of Mathematics
Stony Brook University

Course Description: This is a mathematically rigorous course, and most statements will come with complete proofs. Topics covered will include properties of complex numbers, analytic functions with examples, contour integrals, the Cauchy integral formula, the fundamental theorem of algebra, power series and Laurent series, residues and poles with applications, conformal mappings with applications and other topics if time permits. We are going to cover Chapters 1–9 from the textbook below as time permits.

Textbook: Complex Variables and Applications, by James W. Brown and Ruel V. Churchill, 9th Edition, McGraw-Hill, 2013.

Prerequisite: In order to take this course, you must have passed MAT 203 or MAT 220 or MAT 307 or AMS 261 (Calculus III) with a grade of C or better. The following courses are advisory prerequisites: MAT 200 or MAT 250 (Logic, Language, and Proof).

Instructor: Dimitrios Ntalampekos, Math Tower 3-118. Office Hours: Tuesday at 2:30-3:30pm and Wednesday at 4:00-5:00pm. Email: `dimitrios.ntalampekos@stonybrook.edu`

Course Assistant: Mads Villadsen, Math Tower S-240A. Office Hours: Friday at 12:30-1:30pm and by appointment. Email: `mads.villadsen@stonybrook.edu`

Class schedule: Tuesday and Thursday at 1:00-2:20pm, Library E4310.

Homework: Homework is a fundamental part of this course, and you will have to work hard on the assigned problems in order to succeed. Assignments will be posted on the course website at the beginning of each week, and will be **due on Thursday of the following week at the beginning of the lecture**. You can also turn in the homework during office hours. **Late homework will not be accepted.** Homework will account for 25% of the total grade. In order to receive full credit for any problem you must show all of your work, and must provide full justification for your answer.

Grading Policy: HW 25%, Midterm 35%, Final 40%.

Exams: There will be an in class midterm as well as a final, each respectively accounting for 35% and 40% of the total grade. By enrolling in this course, you are attesting to the fact that you will be available for the exams at the following times:
The **midterm** exam will be on Thursday, March 28 in class.
The **final** exam will be on Tuesday, May 21, at 2:15-5:00pm.

Help: The Math Learning Center (MLC) is located in Math Tower S-235, and offers free help to any student requesting it. It also provides a locale for students wishing to form study groups. The MLC is open 10am-7pm Monday through Thursday and 10am-2pm on Friday. A list of graduate students available for hire as private tutors is maintained by the Undergraduate Mathematics Office, Math Tower P-143.

Disability Support Services (DSS)

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential. Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website: `http://www.stonybrook.edu/ehs/fire/disabilities`

Academic Integrity

Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at `http://www.stonybrook.edu/commcms/academic_integrity/index.html`

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.