maa6407 syllabus

MAA6407 SYLLABUS

Complex Analysis II
Section 1D18 Spring 2017

Instructor
Scott McCullough

Course Content and Objectives

The first semester (6406) of this course treats the fundamentals of the theory of functions, including complex integration, Cauchy integral formula, singularities and the argument principle, maximum modulus, convergence in spaces of holomorphic function, and Runge's Theorem. The second semester (6407) covers Schwarz reflection, harmonic functions, entire functions and the Picard theorems. Depending on student interest, potential additional topics for the second semester include (but is not limited to) multiply connected domains, Riemann surfaces, distinguished varieties, boundary values of bounded analytic functions, the Hardy spaces on the disc, and more on harmonic functions.

Recommended text
Functions of one complex variable, by John Conway.
Functions of one complex variable II, by John Conway

References
Real and Complex Analysis, by Walter Rudin.
Conformal mapping, by Zeev Nerahi.

Suggested Problems
Selected problems from the text will be assigned on a daily basis.

Homework
Homework problems, selected to complement each students interests and course of study, will be assigned, collected, and graded.

Exams
For those planning to take the PhD qualifying exam in complex analysis, there will be a self administered midterm and final exam with times to be arranged.

Grading

Course grades will be based on participation, homework and/or exams. See the current UF policy on assigning grade points.

Attendance
Attendance is recommended.

Additional Information:

Grades.
Grading will be in accord with the UF policy stated at
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Academic Honesty.
The course will be conducted in accordance with the University honor code and academic honesty policy, which can be found in the student guide

Accommodations for Students with Disabilities.
"Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, https://www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester."

Online Evaluations.
"Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at https://evaluations.ufl.edu/results/."

Contact information for the Counseling and Wellness Center.
http://www.counseling.ufl.edu/cwc/Default.aspx; 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Tentative weekly schedule

Week 1: complex numbers.
Week 2: review of metric spaces.
Week 3: analytic functions.
Weeks 4-6. complex integration.
Week 7. Singularities.
Week 8. maximum modulus.

Weeks 9-10. sequence of analytic functions, normal families.
Week 11. Runge's Theorem.
Week 12. Schwarz reflection.
Week 13. harmonic functions.
Week 14-16. Holidays, Entire functions, Picard Theorems.