

Applied Complex Variables and Asymptotic Methods
Math 6720 - Spring 2017

Lectures: MWF 9:40am-10:30am, FASB 250
Instructor: Christel Hohenegger
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E-mail: choheneg@math.utah.edu
Course webpage: <http://www.math.utah.edu/~choheneg/MATH6720.html>
Office Hours: W 8:00-9:30am or by appointment

Text: *Principles of Applied Mathematics*, J.P. Keener; Perseus Books 2000; ISBN 0-7382-0129-4.

Updates: Assignments and solutions will be posted on my personal webpage <http://www.math.utah.edu/~choheneg/MATH6720.html>.

Prerequisites: "C" or better in MATH 52100 AND MATH 5410 .

Description: Topics include Cauchy-Riemann equations, Cauchy integral formulas, Taylor and Laurent series, multivalued functions, branch points and cuts, analytic continuation, Jordan's lemma, evaluation of real integrals; potential theory, stream functions, conformal mapping, special functions, Fourier, Laplace, Hilbert, and Z transforms, scattering theory, asymptotic analysis of integrals, Laplace's method, Watson's lemma, method of steepest descents.

Homework: There will be weekly homework sets, collected almost every Monday except when there is a holiday or an exam. There will be a total of about ten homework sets. Late homework will only be accepted under exceptional circumstances. Collaboration is allowed, however you are required to turn in your own solution. Only hardcopy (handwritten or typed) and stapled homework will be accepted (no digital copies). Depending on the length of the set, not all problems will be graded for correctness.

Midterm Exam: There will be one take-home midterm exam with a two hours (honor system) time limit due on **Monday, February 27th at 12pm**. Only hardcopy (handwritten or typed) and stapled exam will be accepted (no digital copies).

Final Exam: The final exam will be a comprehensive take-home exam with a two hours (honor system) limit due on **Wednesday, May 3rd at 12pm**. Only hardcopy (handwritten or typed) and stapled final will be accepted (no digital copies).

Grading: Grades are determined as a weighted average as follows

Homework	Midterm	Finall
50%	20%	30%

I reserve the right to modify these in special cases and to decide if a curve is needed.

Make-up and regrading: Any conflicts leading to a missed assignment are your responsibility and must be arranged ahead of time or within a week past the due date. Failure to do so may result in a zero for the corresponding assignment. Regrading inquiries must be submitted within a week of the assignment being returned.

Technologies: Please refrain from using your phones, tablets and laptops to check your emails or your social media accounts, to chat with your friends, to play games, or to surf the web unless absolutely necessary. You are welcome to use technologies to take notes.

Students with Disabilities: The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 581-5020. CDS will work with you and us to make arrangements for accommodations.

Honor Code: You are expected to abide by the University of Utah Honor Code and to avoid any instances of academic misconduct, including but not limited to: (1) possessing, using, or exchanging improperly acquired written or oral information during an exam, (2) substitution of material that is wholly or substantially identical to that created or published by another individual(s), and (3) false claims of performance or work.

If you have any concerns or questions, in particular about a given problem's suggested solution, I am always happy to discuss them with you during office hours or at another time.

Important Dates:

Class begins	January 9
Martin Luther King Jr. Day holiday	January 16
Presidents' Day holiday	February 20
Midterm	February 27
Spring break	March 12-19
Class ends	April 25
Final	May 3