

MATH 4353/5353, Complex Analysis, Summer 2016

Section: 01 **Hours Credit:** 3 hours

Room and Hours: Boyd 302, TR, 11:00 am – 1:30 pm

Prerequisite: MATH 3243 with C or better

Instructor: Dr. Kwang Shin

Office Hours: M (10:00 am – 12:00 pm) and TR (10:00 am – 11:00 am, 1:30 pm – 2:00 pm, and 4:30 pm – 5:30 pm) or by appointment.

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Course Webpage: <http://www.westga.edu/~kshin/4353/>

Course Description: This course is an introduction to the theory of functions of a single complex variable. Topics include algebraic and geometric properties of complex numbers, Euler's formula, analytic functions of a complex variable, Cauchy-Riemann equations, elementary complex functions, contour integrals, Cauchy's theorem, infinite series, Laurent series, and theory of residues.

Text: *Complex Variables and Applications, 8th ed.* by James W. Brown and Ruel V. Churchill. We will cover some topics in Chapters 1 – 6.

Learning Outcomes: The student will be able:

- To represent complex numbers algebraically and geometrically,
- To define and analyze limits and continuity for complex functions as well as consequences of continuity,
- To apply the concept and consequences of analyticity and the Cauchy-Riemann equations and of results on harmonic and entire functions including the fundamental theorem of algebra,
- To analyze sequences and series of analytic functions and types of convergence,
- To evaluate complex contour integrals directly and by the fundamental theorem, apply the Cauchy integral theorem in its various versions, and the Cauchy integral formula, and
- To represent functions as Taylor, power and Laurent series, classify singularities and poles, find residues and evaluate complex integrals using the residue theorem.

Hour Exams: Exam 1 (Tue, June 21), Exam 2 (Thu, July 7), Exam 3 (Thu, July 21).

Final Exam: Thursday, July 28, 3:00 pm -- 5:00 pm. The final exam will be cumulative.

Homework: Homework will be assigned almost every day. Homework will be collected at the beginning of the next class for grade. Partial credit will be considered for incomplete work. However, **late submission will receive zero point.** The total homework score will be converted to a 150 point scale at the end of semester.

Grade Scale:	3 hour exams	300 points (100 points each)
	Homework	150 points
	Final	200 points

	Total	650 points

A: 585 - 650, B: 520 - 584, C: 455 - 519, D: 357 - 454, F: 0 – 356

June 29 is the last day to withdraw from a class with a grade of W.

Make-up: In general, make-up exams will not be given after the scheduled exam date. There will be no make-up final except when a conflict with other finals occurs. If a conflict occurs to you, please inform the instructor at least two weeks in advance. Make-up hour exams will be granted for official university activities if the student notifies the instructor at least a week in advance and for well-documented illness.

Attendance and Pop-up Quizzes: Attendance is required and expected. Students are responsible for all material covered in class and all announcements made. An undetermined number of pop-up quizzes may be given for extra points. Such a quiz will consist of one problem, discussed during the same class.

Starting from the 4th unjustified absence, each absence leads to a half percent deduction from the final grade. It will count as absent if you are not present when the attendance is checked.

Classroom Behavior: You are expected not to disturb your classmate's learning. **No headphones or electronic devices that are not approved by the instructor are allowed in class.**

Also, please carefully review the following information at <http://tinyurl.com/UWGSyllabusPolicies> or http://www.westga.edu/assetsDept/vpaa/Common_Language_for_Course_Syllabi.pdf. It contains important material pertaining to your rights and responsibilities in this class. Because these statements are updated as federal, state, university, and accreditation standards change, you should review the information each semester.