

Course Guide: Math 331: Complex Analysis: Fall 2026, T-R 2:15-3:30, DH 2056:

	Topic	Notes	Remark	Assignment
T: 8-25	Lecture 1: Complex number system algebra and geometry, arg and Arg, polar form	Ch. 1		
R: 8-27	Lecture 2: Complex exp, log and Log, Root Functions, Polynomial Algebra	Ch. 2		
T: 9-1	Lecture 3: Complex exp, log and Log, Root Functions, Polynomial Algebra	Ch. 2		Mission 1
R: 9-3	Lecture 4: Euclidean Topology and limits, Differential Calculus of maps	Ch. 3 & 4		
T: 9-8	Lecture 5: Definitions of complex derivative and theory of complex diff. maps	Ch. 5		Mission 2
R: 9-10	Lecture 6: Definitions of complex derivative and theory of complex diff. maps	Ch. 5		
T: 9-15	Lecture 7: Properties of holomorphic maps	Ch. 6		Mission 3
R: 9-17	Lecture 8: Contour Integration and the FTC for complex integrals, ML-theorem	Ch. 7		
T: 9-22	Lecture 9: Path independence and antiderivatives for the complex integral	Ch. 7		Mission 4
R: 9-24	Lecture 10: Cauchy-Goursat Theorem, Cauchy's Integral Formula	Ch. 7		
T: 9-29	Lecture 11: Further theorems of integral complex analysis	Ch. 7		Quiz 1
R: 10-1	Lecture 12: Further examples & Questions			
T: 10-6	Boss Fight I			
R: 10-8	Lecture 13: Theory of power series for complex functions	Ch. 8		
T: 10-13	Lecture 14: Theory of power series for complex functions	Ch. 8		
	FALL BREAK (10-15 and 10-16)			
T: 10-20	Lecture 15: Laurent Decomposition, Singularity Classification, Partial Fractions	Ch. 9		Mission 5
R: 10-22	Lecture 16: Laurent Decomposition, Singularity Classification, Partial Fractions	Ch. 9		
T: 10-27	Lecture 17: Residue Theorem & Applications	Ch. 10		Mission 6
R: 10-29	Lecture 18: Residue Theorem & Applications	Ch. 10		
T: 11-3	Lecture 19: Argument Principle and Rouché's Theorem	Ch. 11		Mission 7
R: 11-5	Lecture 20: Fractional Linear Transformations as maps on the complex plane	Ch. 12		
T: 11-10	Lecture 21: The conformal mapping technique	Ch. 12		Mission 8
R: 11-12	Lecture 22: Transformation Techniques		Saff & Snider Chapter 8	
T: 11-17	Lecture 23: Transformation Techniques		Saff & Snider Chapter 8	Mission 9*
R: 11-19	Lecture 24: Introduction to Riemann Surfaces		Informed by Schlag's text	
	THANKSGIVING BREAK (11-23 to 11-27)			
T: 12-1	Lecture 25: Further examples & Questions			Quiz 2
R: 12-3	Boss Fight II			
T: 12-8	Lecture 26: Directions of further study			
R: 12-10	Final Boss Fight Part 1			
T: 12-15	Final Boss Fight Part 2			

*this one can be turned in Friday before I leave school.

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- ❖ This schedule is tentative, I will likely adhere closely, but sometimes life or weather may interfere. It is important for you to monitor your email so cancellations and modifications reach you as soon as possible (please turn on notifications in Canvas).
- ❖ There is no electronic homework in this class. Work is to be completed legibly on paper and is typically collected at the start of the class meeting on which it is due.
- ❖ Grading: usual 1000pts scale with:
 - Boss Fight 1 = 200pts,
 - Boss Fight 2 = 200pts,
 - Quizzes = 80pts [probably mostly take-home, but in-class portion is also possible on the due-date during class]
 - Missions = 220pts, [I keep the highest 10 scores, there is some bonus to earn here]
 - Final Boss Fight = 300pts.