



**MA362/MA562 Complex Analysis with
Applications
Syllabus**

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Please Look at my website regularly for updates and homework info.

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Course Text: *Complex Variables and Applications*, Mark J. Ablowitz, Athanassios S. Fokas.

Day	Section	Title	Homework
L1 ThJ8	1.1	Complex Numbers Properties	
L2 TuJ13	1.2	Elementary Functions and Stereographic Projs	
L3 ThJ15	1.3	Limits, Continuity, Complex Differentiation	
L4 TuJ20	1.3.1	Applications to Ordinary Differential Equations	
		Electronic circuits	
L5 ThJ22	2.1.1	Analytic Functions-Cauchy-Riemann Equations	HW1 Due
L6 TuJ27	2.1.2	Ideal Fluid Flow, Equipotentials, Consequences of Analyticity	
L7 ThJ29		Steady State Temp. As a Harmonic Function	HW2 Due
		Washers, and walls-Heat Pipes	
L8 TuF3	2.2	Multivalued Functions	
L9 ThF5	2.4	Complex Integration	HW3 Due
L10 ThF10		More on Complex Integration, about Path Independence	
Tu F12		Feb. Break – Veg.-out.	
L11 TuF17	2.5	Cauchy's Theorem	
L12 ThF19	2.6	Cauchy's Integral Formula, and generalizations	
T13 TuF24	2.6	Continued	HW4 Due
L14 ThF26		Exam 1	
L15 TuM3	3.1	Definitions and Basic Props of Complex Sequences and Series	
L16 ThM5	3.2	Taylor Series and Power Series	
L17 TuM10	3.2/3.3	Cont Taylor Series and Power Series + Laurent Series	HW5 Due
L18 ThM12	3.3	More Laurent Series	
		Spring Break	
L19 TuM24	3.3	Laurent Series	
L20 ThM26	3.4	Theory for Sequences and Series	HW6 Due
L21 TuM31	3.5	Singularities, Analytic Continuation, Point at Infinity	
T22 ThA2		Exam 2	
L23 TuA7	3.5 4.1	More Singularity Stuff, then Cauchy's Residue Theorem	
L24 ThA9	4.1	More Residue stuff, and a different point of view.	
L25 TuA14	4.2	More Residue Examples Evaluation of Certain Integrals+ Laplace Transforms	
L26 ThA16	4.3	Principal Value Integrals, Branch Points	Move:HW7 Due
L27 TuA21	4.3	More PVT and BP	
L28 ThA23		Something Interesting	
Friday, A24		Last Day of the Semester!	HW8 Due

