

Math 4123 - Complex Analysis  
 Spring 2020 - Schedule  
 updated April 27, 2020 at 13:13

Class	Day	Section	Title	Problems
1	2020.01.13	1.1	The Origin of Complex Numbers	none
		1.2	The Algebra of Complex Numbers	1, 2, 3, 4, 6
		1.3	The Geometry of Complex Numbers	1, 3, 5, 6, 7, 9, 11, 12, 17, 20, 23
2	2020.01.15	1.4	The Geometry of Complex Numbers, Continued	1, 2, 3, 5, 7, 11, 13
3	2020.01.17	1.4	The Geometry of Complex Numbers, Continued (Cont...)	
		1.5	The Algebra of Complex Numbers, Revisited	1, 3, 4, 5, 7, 9, 11
4	2020.01.22	1.6	The Topology of Complex Numbers	1, 2, 5, 9
5	2020.01.24	1.6	The Topology of Complex Numbers (Cont...)	
6	2020.01.27	2.1	The Fundamentals of Linear Mappings	1, 3, 6, 7, 10, 11, 13
7	2020.01.27	2.2	The Fundamentals of Linear Mappings (Cont...)	
8	2020.01.29	2.2	The Mappings $w = z^n$ and $w = z^{1/n}$	1, 2, 7, 9, 10, 11
9	2020.02.03	2.3	Limits and Continuity	1, 2, 6, 7, 8, 10
10	2020.02.05	2.4	Branches and Functions	1, 5, 6, 7, 8, 9
11	2020.02.07	2.5	The Reciprocal transformation $w = 1/z$	1, 2, 3, 14
12	2020.02.10	3.1	Differentiable and Analytic Functions	1, 2, 3, 11
13	2020.02.12	3.2	The Cauchy-Riemann Equations	1(a, d, h), 2, 3, 8, 9
14	2020.02.14	3.2	The Cauchy-Riemann Equations (Cont...)	
15	2020.02.17	3.3	Harmonic Functions	1-6 all
16	2020.02.19	4.1	Sequences and Series	1, 2, 6, 7, 10, 12
17	2020.02.21	4.3	Geometric Series and Convergence Theorems	1, 2, 4(a, c), 5(a, d)
18	2020.02.24	4.3	Geometric Series and Convergence Theorems (cont...)	
19	2020.02.26	4.4	Power Series Functions	3
20	2020.02.28	5.1	The Complex Exponential Function	4, 9
21	2020.03.02	5.2	The Complex Logarithm	1, 3, 5
22	2020.03.04	5.3	Complex Exponents	1, 2, 3
23	2020.03.06	5.4	Trigonometric and Hyperbolic Functions	2, 6, 9, 10
		5.5	Inverse Trigonometric and Hyperbolic Functions	none

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Class	Day	Section	Title	Problems
24	2020.03.09	6.1	Complex Integrals	1(c, d), 2, 3
25	2020.03.11	6.2	Contours and Contour Integrals	1, 2, 6, 7(b, f, g), 8, 9, 10, 14
26	2020.03.13	6.2	Contours and Contour Integrals (cont...)	
27	2020.03.30	6.3	The Cauchy-Goursat Theorem	1, 4, 5, 7, 11, 12, 13
28	2020.04.01	6.3	The Cauchy-Goursat Theorem (cont...)	
29	2020.04.03	6.4	The Fundamental Theorems of Integration	1, 4, 5, 14, 16, 17, 18
30	2020.04.06	6.5	Integral Representations for Analytic Functions	1, 2, 4, 5, 10, 12
30	2020.04.08	6.5	Integral Representations for Analytic Functions (cont...)	
31	2020.04.13	6.6	The Theorems of Morera and Liouville, and Extensions	1d, 2-6 all
32	2020.04.15	6.6	The Theorems of Morera and Liouville, and Extensions (cont...)	
33	2020.04.17	7.1	Uniform Convergence	3, 4, 5, 6
34	2020.04.20	7.2	Taylor Series Representation	1, 2, 3, 7
35	2020.04.22	7.2	Taylor Series Representation (cont...)	
36	2020.04.24	7.3	Laurent Series Representation	1-7 all, 9
37	2020.04.27	7.4	Singularities, Zeros, and Poles	1, 2, 3
38	2020.04.29	7.4	Singularities, Zeros, and Poles	
39	2020.05.01	8.1	The Residue Theorem	3, 5, 6
		8.2	Trigonometric Integrals	3, 4, 6, 8, 9
		8.3	Improper Integrals of Rational Functions	4, 5, 13
		8.4	Improper Integrals Involving Trigonometric Functions	2, 5, 12
		8.5	Indented Contour Integrals	2, 4, 11, 15
		8.6	Integrands with Branch Points	none
		8.7	The Argument Principle and Rouché's Theorem	none