

[Syllabus](#)[Schedule](#)[Policies](#)[Exams](#)[LaTeX](#)[Books](#)

MATH 352 WINTER 2025 — COMPLEX ANALYSIS

Assignments and Schedule

- Write solutions to homework exercises in the style of a textbook example.
- The lowest four homework scores will be dropped. This accommodates for illness or other reasons that might prevent you from completing an assignment on time.
- If you are sick or not feeling well enough to attend class, I'll excuse your attendance for that day.
- Upload PDF files to Gradescope, not image files like .png or .jpg. Each page of the PDF file should be standard letter size 8.5" by 11". Other page sizes make it difficult for the document to be viewable in Gradescope.
- If you write on a tablet computer, set the page size to 8.5" by 11" and write in a size appropriate to those dimensions.
- There is a [Gradescope app](#) that looks pretty easy to use for submitting homework. You can also upload your homework on the [Gradescope webpage](#). My favorite app for scanning hand written documents to PDF is [Adobe Scan](#).
- Homework is due by **10:00 pm**.
- A sample $LATEX$ homework template is on the [LaTeX page](#). Use 12 point font and 1 inch margins.
- [Gradescope getting started guide](#)
- Start inside of Learning Suite and click on the link for the assignment that takes you to Gradescope.
- [How to submit assignments to Gradescope.com](#)
- Read [Best Practices for Submitting an Assignment](#).
- Textbook [errata](#)

Class and Office Hours

	Mon	Tue	Wed	Thu	Fri
9:00 am	Math 352 203 TMCB		Math 352 203 TMCB		Math 352 203 TMCB
10:00 am	90%		90%		90%
11:00 am					
12:00 pm					
1:00 pm	Math 487 121 TMCB	80%	Math 487 121 TMCB	80%	Math 487 121 TMCB
2:00 pm	90%	80%	90%		90%
3:00 pm	60%	60%	60%	60%	60%
4:00 pm	40%	40%	40%	40%	40%

Office Hours Schedule: I'll have an open door policy. You can come ask questions almost any time. I'm unavailable at the shaded times. Right after class is always a good time to talk. If my door is open, that's an invitation to come in and ask questions. Sometimes I work with my door closed to keep out noise. Try knocking on my door 218 TMCB, and if I am not in the middle of something crucial, I'll also be happy to answer questions (except during the hour before class). At 4:00 pm, if no one seems to be there to ask questions, I might leave and work at home.

Homework Schedule

*Prove all things.
(1 Thessalonians 5:21)*

It may be necessary to make minor adjustments to the schedule as the semester progresses.

If a file is password protected, you can find the username and password in the Learning Suite announcements.

✓	Lecture	Date	Topic		HW #	Assignment	HW Due
			Class notes for Chapter 1				
✓	1	Wed, Jan 8	1.1 The Algebra of Complex Numbers 1.2 Point Representation of Complex Numbers		1	1.1: 21, 22, 23, 24, 28 1.2: 7, 14, 16, 21	Mon, Jan 13
✓	2	Fri, Jan 10	1.3 Vectors and Polar Form		2	1.3: 7, 11, 13, 16, 22, 23 See hint for 1.3.11	Wed, Jan 15
✓	3	Mon, Jan 13	1.4 The Complex Exponential		3	1.4: 12, 13, 16, 18, 20, 21, 22, 23 Hint for 1.4.20 Hint for 21. Use the triangle inequality and the identity $\frac{e^{i\alpha} - e^{-i\alpha}}{2i} = \sin(\alpha)$.	Fri, Jan 17
✓	4	Wed, Jan 15	1.5 Powers and Roots		4	1.5: 5, 6, 7, 10, 16, 17	Wed, Jan 22
✓	5	Fri, Jan 17	1.5 Powers and Roots, continued 1.6 Planar Sets		5	1.5: 18, 19, 21ab 1.6: 10, 17, 18, 21	Fri, Jan 24
✓		Mon, Jan 20	Martin Luther King, Jr. Day				
			Class notes for Chapter 2				
✓	6	Wed, Jan 22	Chapter 1 (continued)		6	2.1: 5, 6, 8, 9, 10 Plots of $f(z)$ - Mathematica Plots of $f(z)$ - PDF	Mon, Jan 27
✓	7	Fri, Jan 24	2.1 Functions of a Complex Variable		7	2.2: 3, 5, 8, 9, 17, 18 Hints for 2.2.9 and 2.2.18	Wed, Jan 29
✓	8	Mon, Jan 27	2.2 Limits and Continuity		8	2.3: 10, 12, 13, 15, 17	Fri, Jan 31

✓	Lecture	Date	Topic		HW #	Assignment	HW Due
✓	9	Wed, Jan 29	2.3 Analyticity		9	2.4: 2, 4, 5, 6, 12, 15	Mon, Feb 3
✓	10	Fri, Jan 31	2.4 The Cauchy-Riemann Equations		10	2.5: 3, 4, 10, 11, 15 Plots of level curves - Mathematica Plots of level curve - PDF Hint for Exercise 2.5.10	Wed, Feb 5
			Class notes for Chapter 3				
✓	11	Mon, Feb 3	2.5 Harmonic Functions		11	No HW 11. Study for exam.	Fri, Feb 7
✓	12	Wed, Feb 5	3.1 Polynomials and Rational Functions		12	No HW 12. Study for exam or take exam.	Mon, Feb 10
✓	13	Fri, Feb 7	3.2 Exponential, Trig, Hyperbolic Functions		13	3.1: 4, 6, 7, 9, 10, 13(abc)	Wed, Feb 12
						Optional – Some of you might enjoy the Gauss-Lucas Theorem: 3.1: 17, 18, 19, 20, 21	
			Exam 1, Fri, Feb 7–Mon, Feb 10 Covers sections 1.1–1.6 and 2.1–2.5			Study Guide and Sample Exams Testing Center Hours Exam 1 Solutions	
✓	14	Mon, Feb 10	3.3 The Logarithmic Function		14	3.2: 13, 21; 3.3: 5, 9, 12, 14	Fri, Feb 14
✓	15	Wed, Feb 12	3.4 Washers, Wedges, and Walls		15	3.4: 1, 2, 3, 4, 5, 6	Tue, Feb 18
✓	16	Fri, Feb 14	3.5 Complex Powers and Inverse Trig Functions		16	3.5: 1, 2, 3, 4, 5, 6, 9, 11, 15	Wed, Feb 19
✓		Mon, Feb 17	Presidents Day				
			Lecture Notes for Chapter 4				
✓	17	Tue, Feb 18 (Monday Schedule)	4.1 Contours		17	4.1: 1, 2, 3, 4, 6	Fri, Feb 21
✓	18	Wed, Feb 19	4.2 Contour Integrals		18	4.2: 5, 6, 8, 10	Mon, Feb 24
✓	19	Fri, Feb 21	4.2 Contour Integrals 4.3 Independence of Path		19	4.2: 14, 15, 16	Wed, Feb 26
✓	20	Mon, Feb 24	4.3 Independence of Path 4.4 Cauchy's Integral Theorem		20	4.3: 2, 3, 4, 5, 10	Fri, Feb 28
✓	21	Wed, Feb 26	4.4 Cauchy's Integral Theorem 4.5 Cauchy's Integral Formula		21	4.4: 9, 13, 15, 16, 17, 18	Mon, Mar 3
✓	22	Fri, Feb 28	4.5 Cauchy's Integral Formula Supplement for		22	4.5: 2, 3, 4, 5, 8	Wed, Mar 5

✓	Lecture	Date	Topic		HW #	Assignment	HW Due
			Cauchy's Integral Formula				
			Exam 2, Mon, Mar 3–Wed, Mar 5 Covers sections 3.1–3.5 and 4.1–4.4			Study Guide and Sample Exams Testing Center Hours Exam 2 Solutions	
✓	23	Mon, Mar 3	4.6 Bounds for Analytic Functions		23	4.6: 1, 2, 3, 4, 7, 14	Fri, Mar 7
			Lecture notes for Chapter 5				
✓	24	Wed, Mar 5	5.1 Sequences and Series		24	5.1: 9, 11, 12, 13, 14, 18, 19	Mon, Mar 10
✓	25	Fri, Mar 7	5.2 Taylor Series		25	5.2: 4, 7, 11(b)(c), 14, 16	Wed, Mar 12
✓	26	Mon, Mar 10	5.3 Power Series		26	5.3: 3, 5, 7, 8, 10, 11	Fri, Mar 14
✓	27	Wed, Mar 12	5.3 Power Series		27	5.3: 13(a)(c), 14, 15, 16	Mon, Mar 17
✓	28	Fri, Mar 14	Review		28		Wed, Mar 19
✓	29	Mon, Mar 17	5.5 Laurent Series Full details of proof of Laurent series		29	5.5: 3, 7, 9, 10, 11	Mon, Mar 24
✓	30	Wed, Mar 19	5.6 Zeros and Singularities 5.7 The Point at Infinity		30	5.6: 1, 3, 10, 12, 13, 17	Wed, Mar 26
✓		Fri, Mar 21	No class				
✓	31	Mon, Mar 24	5.8 Analytic Continuation		31	5.8: 4, 5, 6, 7, 8	Fri, Mar 28
✓	32	Wed, Mar 26	6.1 Residue Theorem		32	6.1: 1, 3, 4, 6, 7	Mon, Mar 31
			Lecture notes for Chapter 6				
✓	33	Fri, Mar 28	6.2 Trigonometric Integrals		33	6.2: 1, 2, 3, 5, 9	Wed, Apr 2
✓	34	Mon, Mar 31	6.3 Improper Integrals		34		Fri, Apr 4
✓	35	Wed, Apr 2	Review		35	6.3: 2, 4, 8, 9, 11	Tue, Apr 8
			Exam 3, Thu, Apr 3 – Mon, Apr 7 Covers section 4.4–4.6, 5.1–5.3, 5.5–5.6, 6.1–6.2 Testing Center Hours			Study Guide and Sample Exams	
✓	36	Fri, Apr 4	6.4 Improper Integrals Involving Trigonometric Function		36	6.4: 3, 7, 9, 10	Wed, Apr 9
✓			Sat, Apr 5–Sun, Apr 6 — General Conference				

✓	Lecture	Date	Topic		HW #	Assignment	HW Due
✓	37	Mon, Apr 7	6.5 Indented Contours		37	6.5: 1, 2, 4, 5	Fri, Apr 11
✓	38	Wed, Apr 9	6.5 Indented Contours 6.6 Multiple-Valued Functions		38	6.5: 6, 11 6.6: 1, 2, 9(a) Exercise 6.5.6 Exercise 6.5.11 Exercise 6.6.9(a)	Mon, Apr 14
	39	Fri, Apr 11	6.6 Multiple Valued-Functions		39	6.6: 9(b), 10, 12 Exercise 6.6.9(b) Exercise 6.6.10 Exercise 6.6.12	Wed, Apr 16
	40	Mon, Apr 14	6.7 Argument Principle and Rouché's Theorem		40		
	41	Wed, Apr 16	6.7 Argument Principle and Rouché's Theorem Open Mapping Theorem		41		
			Final Exam, Saturday, April 19 7:00am – 10:00am 203 TMCB			Final Exam Solutions	

This class has 41 class periods

This page was last modified on: 04/23/2025 09:50:54

Syllabus Schedule Policies Exams Books LaTeX