

COMPLEX ANALYSIS

Spring 2018

MATH-UA.0282-001

Instructor: Liming PANG	Time: Tue. Thu. 15:30–16:45
Email: liming@cims.nyu.edu	Classroom: CIWW 202

Course Web Page: <https://cims.nyu.edu/~liming/Complex/2018.html>

Office Hours: Thursday 10:00–12:00, CIWW Room 720

Textbook: James Brown and Ruel Churchill, *Complex Variables and Applications*, 9th Edition, McGraw-Hill Education, 2014

Teaching Assistant: Jiajun TONG (jiajun@cims.nyu.edu)

Grading Policy: Homework (20%), Quiz 1 (5%), Quiz 2 (5%), Midterm (30%), Final (40%).

Exam Schedule:

Quiz 1	Feb.23 2018
Midterm	Mar.08 2018
Quiz 2	Apr.20 2018
Final Exam	May.10 2018

Class Policy:

- Homework will be released each Thursday or Friday, and due on the following Friday during recitation. Late homework or emailed version shall NOT be accepted.
- You may discuss with your classmates about homework, but you should organize and write your solutions by yourself.
- We will NOT be able to accommodate out-of-sequence exams for purposes of more convenient travel, including already purchased tickets. Please note again the date of the exams and plan your travel accordingly.
- Exams will be close book. Books, paper or electronic material, calculator or electronic devices are NOT allowed during exams.
- The recitation is on Friday 09:30–10:45 at CIWW 202. The TA will discuss about some example exercises, remark on previous homework and review course material.

Tentative Course Outline:

- 01/23: Complex Numbers
- 01/25: Exponential Form
- 01/30: Limits and Continuity
- 02/01: Derivatives and Differentiation
- 02/06: Cauchy-Riemann Equations
- 02/08: Analytic Functions
- 02/13: The Exponential and Logarithmic Functions
- 02/15: Branches of Logarithmic Functions, The Power Functions
- 02/20: The Trigonometric Functions
- 02/22: Integral Along Real Line, Contour
- 02/27: Contour Integral
- 03/01: Upper Bound, Antiderivative
- 03/06: Review
- 03/08: Midterm
- 03/20: Cauchy-Goursat Theorem
- 03/22: Multiply-connected Domains
- 03/23: Cauchy Integral Formula
- 03/29: Fundamental Theorem of Algebra, Maximum Modulus Principle
- 04/03: Series and Power Series
- 04/05: Taylor Series Expansion, Circle of Convergence
- 04/10: Uniform Convergence, Analyticity of Power Series
- 04/12: Laurent Series
- 04/17: Residues
- 04/19: Residue at Infinity, Isolated Singularities
- 04/24: Order of Poles, Zeros
- 04/26: Coincidence Theorem, Zeros and Poles
- 05/01: Improper Integrals
- 05/03: Improper Integrals