Math 352 Winter 2025 — Complex Analysis

Course Syllabus

Instructor

Dr. David Cardon, 218 TMCB, *cardon@mathematics.byu.edu*

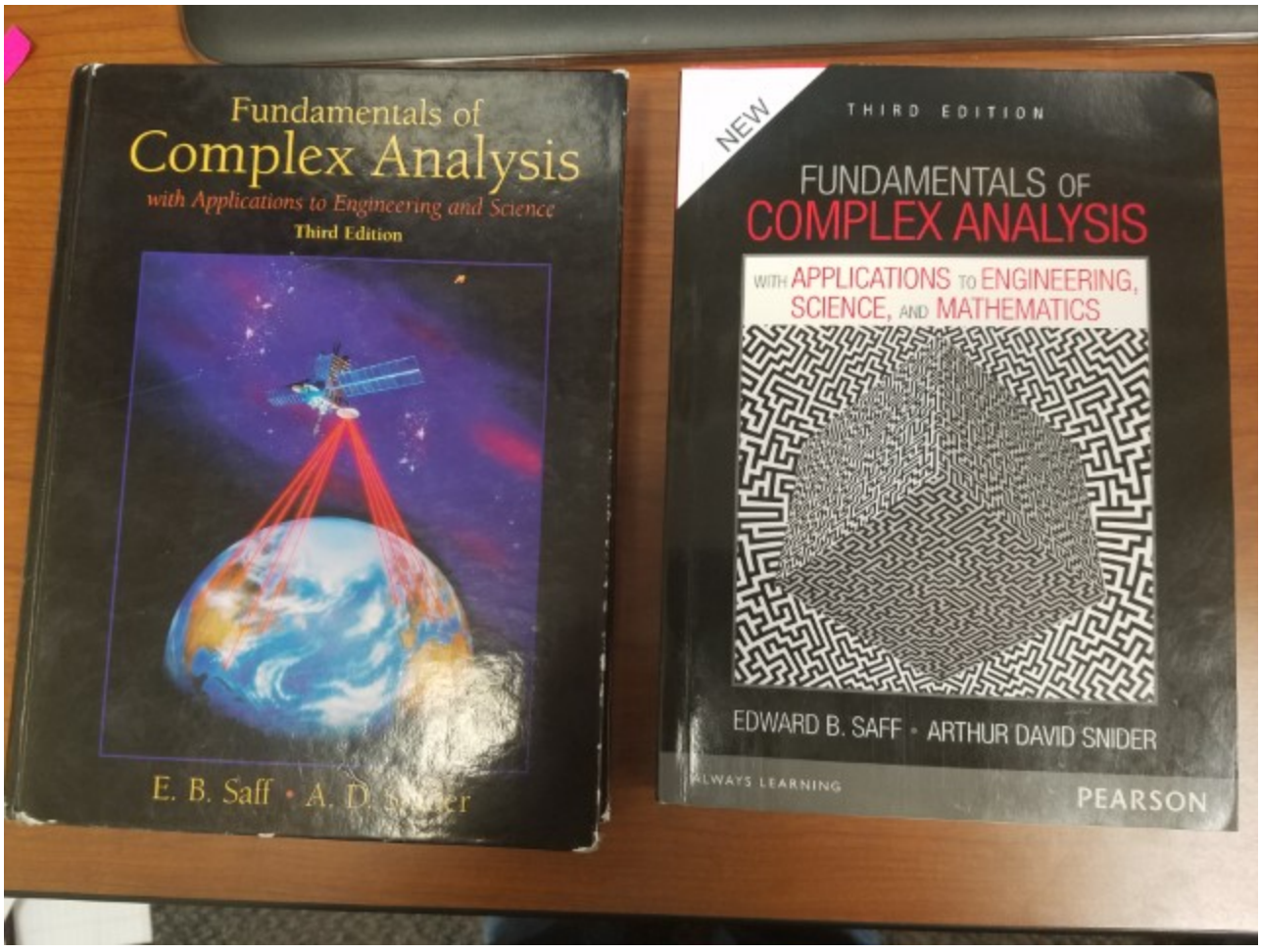
Office Hours: See the schedule page.

Time and Place

9:00a-9:50a MWF, 203 TMCB

Textbook

Fundamentals of Complex Analysis, with Applications to Engineering, Science, and Mathematics (3rd Edition), by Saff and Snider. Pictures of my copies of the American and international versions are given below. There may be other covers for international editions as well.



- American Edition (more expensive) (My American copy is on slightly better paper than the international version.)
- Electronic (Kindle) Edition (The Kindle edition looks good on my 12.3″ iPad Pro and my 10″ Samsung Galaxy Tab S7. It won't work to read it on a phone.)
- International Edition (My copy of the international edition is word-for-word identical to the American edition.)
- Errata (Typographical errors)

Math 352 Prerequisites

Mastery of the material in Math 112, 113, 290, 314. It is recommended to have taken Math 341 or to be concurrently enrolled.

Math 352 Description

A first course in the theory of calculus of a complex variable: analyticity, Cauchy's equations, contour integrals, Cauchy's residue theorem, Cauchy's integral theorem, Taylor series, Laurent series, argument principle.

Grading

Homework	36%
Attendance	8%
Three midterm exams	42%
Final exam	14%
93% will guarantee at least an	A
90% will guarantee at least an	A-
87% will guarantee at least a	B+
83% will guarantee at least a	B
80% will guarantee at least a	B-
77% will guarantee at least a	C+
73% will guarantee at least a	C
70% will guarantee at least a	C-
etc.	

Preparation Time

"In general, the expectation for undergraduate courses is three hours of work per week per credit hour for the average student who is appropriately prepared; much more time may be required to achieve excellence." https://catalog.byu.edu/policy/registration

"The grade A means that the student's performance, achievement, and understanding were excellent in the portion of the subject covered in the class." https://catalog.byu.edu/policy/grading-records

Adequately prepared students should expect to spend a minimum of three hours of work for each credit hour. This adds up to a **minimum** of 9 hours per week during a semester. A minimal time commitment is likely to lead to a B-/C+ or lower. Much more time may be required to achieve excellence.

Homework

Homework will be collected on most days that the class meets. It is due by **10:00 pm** on the day indicated on the schedule. Consistent, diligent completion of homework assignments is essential to success in the course.

Students are responsible to read and understand all relevant sections of the text as part of their studying.

As one of the main objectives is to communicate mathematical ideas clearly, your homework assignments should be well written. You should write with complete sentences using correct spelling and punctuation, just as you would when writing an essay for an English or history course. Usually solutions should include verbal descriptions in addition to mathematical calculations. You should include enough detail that you would be able to understand your work six months later. Not only is it important to arrive at a correct answer, but it is also important to clearly explain the reasoning used to arrive at the conclusion. Your explanations should be clear enough that a typical classmate could easily understand your work. **In most cases, it would be appropriate to write solutions in the style of a textbook example.**

You are encouraged to work together while you study. You may discuss homework problems and how to solve them with each other. However, you may not copy each other's solutions. You should write your solutions in your own words. If your solution and your friends solution to a lengthy exercise are worded nearly identically, then you are not working independently enough. (See Plagiarism and Academic Honesty on the policies page.)

Acknowledging Cooperation

As mentioned previously, students are encouraged to study together. If you worked with others to discuss how to solve a problem, please **mention the names of the other students on your homework assignment to properly give credit**. There is no penalty for doing this, but there could be a penalty for not giving proper acknowledgement. Similarly, if you find a solution to a homework problem in another textbook or online, you must write the solution in your own words, understand everything you write, and provide a proper citation to the source that gave you help.

Homework Format

- Write neatly. Or type with computer using LaTeX, using 12 point font and 1″ margins. LaTeX HW Template
- Use standard size paper, or use a notebook app on your tablet computer that creates 8.5" by 11" pdf pages with writing that is the right size.
- Clearly label each exercise, and include each exercise in the correct order.
- Include the following information on the first page of your assigment:
  - Name
  - Assignment number
  - Date
- Homework will be uploaded to Gradescope.

Dropped Homework Scores and Late Homework

- At the end of the semester, the lowest four homework scores will be dropped.
- There are a few official exceptions to homework due dates: For official BYU events, weddings, funerals, hospitalization, job interviews, or giving talks at conferences, please talk to Dr. Cardon about scheduling.

Illness

Please don't come to class if you have covid or flu-like symptoms or if you feel physically unable to attend class. In this case, contact me and I'll excuse you from class that day. Just send me an email telling me you didn't feel well enough to attend class.

Solutions Manual and Outside Sources

The use of solution manuals is **very highly discouraged**. Using solution manuals often inhibits your learning and typically results in inferior understanding.

Always cite sources that helped you solve a homework problem. If you find a source such as an internet forum or different textbook that helps you solve a problem, after your solution you should acknowledge the source. For example, you might write something like, **"I found a solution to this exercise at (insert reference or web address here)"** or "**Example 3.17 in the book (insert name of book) gave me an idea that helped me solve this exercise."** You must still write the solution in your own words and you must understand everything you write.

Classroom Etiquette

Out of respect for others in the class, please silence your phone and avoid any use of electronic devices in ways unrelated to this class. Avoid any behavior that might distract another class member from paying attention during lectures or discussion. Alway speak respectfully to other class members. Keep in mind that not everyone begins this course with the same mathematical background, and avoid judging others who might have less or more experience.

Having small children in class is often a distraction that degrades the educational experience for the entire class. Please make other arrangements for child care rather than bringing children to class with you.