

Introduction to Formal Mathematics

MATH 108 – Spring 2017

Instructor: Dr. Joshua Wiscons
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Office Hours: **M,W** 2:30PM–3:30PM, **T** 1:00PM–2:00PM, **Th** 10:30AM–11:30AM, and by appointment
Course Webpage: webpages.csus.edu/wiscons/teaching/math108_s17.html

Prerequisites Grade of C- or better in both Math 31 (Calculus 2) and Math 35 (Linear Algebra).

Book *A Transition to Advanced Mathematics*, Eighth Edition; by Douglas Smith, Maurice Eggen, Richard St. Andre. Older editions of the book (but not too old) are also acceptable.

Typical Day A typical class meeting will consist of group work, discussion, student presentations, and mini-lectures from me.

Course Goals The overarching goals of this course are to (1) increase the students' capacity for fact-based reasoning, (2) develop the necessary competency with basic logic, set theory, and proof writing for further study in mathematics, (3) improve the students' written and oral communication of mathematics, and (4) develop the skills and mindset for solving problems with teamwork.

Course Components

Homework. Homework will be due each **Tuesday** at the beginning of class. You are *allowed and encouraged* to work together on homework, but you are expected to **write up your solutions on your own**. Solutions must be written clearly, must include all supporting work, and must be professional in appearance.

Writing Assignments. These assignments (usually proofs) will be due each **Thursday** at the beginning of class. The writing assignments must be typed up using \LaTeX . Becoming proficient with \LaTeX is one of the aims of the course, and we will devote time, in and out of class, to learning this mark-up language. Solutions must include all supporting work.

Discussion. Learning to discuss mathematics will be a highly valued part of this course. This component will evaluate your progress in areas such as ability to present a solution (with clarity and thoughtfulness), ability to share and shed light on your difficulties and failures, and ability to listen critically and respond accordingly, e.g. catching errors and asking follow-up questions.

Exams. There will be 2 midterm exams *tentatively* scheduled for Mar. 9 (Thursday) and Apr. 20 (Thursday). There is also a Final Exam scheduled for Tuesday, May 16 from 10:15 AM–12:15 PM

Grade Composition

Homework	15%
Writing Assignments	15%
Discussion	10%
Midterm Exams	35% (17.5% \times 2)
Final	25%

Writing Intensive This is a writing intensive course. Mathematics is deeply concerned with solving old problems, stating new ones, generalizing and abstracting existing theories, and uncovering new connections, but the end product is always a precise, concise, and thorough article. An “advance” in mathematics is nothing until others believe and understand it. One major goal of this course is to improve the students' ability to

write logically precise, well-structured, and well-justified mathematics. Supplementing this goal, the course aims to build proficiency in typesetting mathematics with \LaTeX .

We will discuss these issues both in and outside of the classroom, and you are strongly encouraged to solicit feedback from me on your rough drafts. Revisions to your final drafts will be by invitation only.

Getting Extra Help Mathematics is hard. Try hard. But don't be surprised if that is not always enough. Talk with your classmates. Talk with the [Math Tutoring Lab](#) tutors (in BRH 118). Talk with me. But please try to avoid asking "how do I start." Instead, try to rewrite the problem in a way that is more meaningful to you and then ask, "does my interpretation of the question seem correct." Very often, the act of "simply" reformulating a problem will lead to insight about its answer.

Disabilities Any student with a documented disability needing academic adjustments or accommodations should speak with me privately during the office hours in first two weeks of class. Please provide me with a copy of your accommodation letter from the [Services to Students with Disabilities \(SSWD\)](#) office. All discussions will remain confidential.

Cheating Cheating will result in disciplinary action and will be reported to the [Office of Student Conduct](#). If you are unsure what constitutes cheating, please speak with me and review Sacramento State's *Academic Honesty Policy and Procedures* document here: www.csus.edu/umannual/student/stu-0100.htm.