

TRANSITION TO ADVANCED MATHEMATICS

SYLLABUS

Fall 2021

Subhadip Chowdhury

Math 215

Course Info

- **Meeting Time:** 12:00 PM - 12:50 PM MWF (EST)
- **Location:** Taylor 209

Instructor Info

- **Instructor:** Subhadip Chowdhury
- **Email:** shchowdhury@wooster.edu
- **Office:** Taylor 307
- **Office Hours:** See Moodle.

Teaching Assistant Info

- **TA:** TBA
- **Email:** TBA@wooster.edu
- **Office Hours:** TBA
- **Location:** TBA

§A. Overview of Math 215

Welcome to **Transition to Advanced Mathematics**! This course is designed to bridge the gap between Calculus and more abstract mathematics courses that rely heavily on proofs. We will explore several different mathematical topics, such as symbolic logic, set theory, number theory, relations, and functions. While **the primary focus of the course is on developing skills that will enable you to effectively communicate clear and correct mathematical arguments**, we will also cover expository writing and problem-solving strategies.

§B. Pre-Requisites

Students must have completed Math 115 (or AP/ equivalent credit) with a C- or better. If you have any questions about whether this is the right class for you, speak with me immediately.

§C. Learning Objectives & Goals

Upon successful completion of the course, you will be able to:

- Express in writing, knowledge of the terminology, concepts, basic properties and methodology of symbolic logic, set theory, relations and functions, mathematical induction, cardinality, and number systems.
- Formulate and correctly phrase mathematical statements, both verbally and in writing.
- Identify and critique the structure and logic of written proofs.
- Write a readable and mathematically rigorous proof.



Throughout this course we will improve our mathematical reasoning and writing skills, justifying all of our work with the appropriate theorems and conveying all solutions clearly through writing. This course fulfills the 'W' requirement toward graduation at The College of Wooster. *Each 'W' course focuses on writing for learning and communication in a particular discipline.*

§D. Textbook

Our course is structured in a way where we will go over the “Lecture Notes” available on Moodle using an inquiry-based learning (IBL) approach. The content of these notes is primarily from the following reference books that are available for free online.

- [Book of Proof](#) by Richard Hammack, third edition
- [Mathematical Reasoning: Writing and Proof](#) by Ted Sundstrom, version 3

§E. Technology and Communication Expectations

-  **Moodle.** Our course website can be reached directly through the following URL: <http://moodle-2122.wooster.edu/>. Look for “Transition to Adv Mathematics FA21” in your dashboard. Consider Moodle the central location for all aspects of our course. **Always check their first.**
-  **MS Teams.** Our Microsoft Teams page will be the place for quick chats and online office hours.
- Please make sure that you have access to the following technological equipment.
 - **A laptop or tablet device.** A large portion of this class will require you to type your assignments using \LaTeX .
 - **A modern web browser.** You will need to occasionally perform some online research on different topic.
 - Reliable access to high-speed **internet**.
 - An active **MS Office account** through your **wooster.edu** access, so that you can access email, Moodle, and MS Teams.

Note: All the technology we use in this course is intended to enhance our learning. If you foresee troubles with this, the sooner I know, the better I can help; so please do not hesitate to discuss this with me.

- It is imperative that you maintain awareness of course announcements and other communications at all times. **Each student is expected to check their email and Moodle announcements at least once per day and preferably more than once.** All important information will be pushed to you as soon as possible; it’s your responsibility to check messages regularly and act on the information. “I didn’t see the announcement” will not be accepted as an excuse!
- The best way to contact me outside of class is by email or via chat in MS Teams. I will typically only check email and other messages **between 9am EST and 9pm EST on weekdays and sporadically on weekends.** If you send a message that needs a response during those times, you can expect to get a response within about 2 hours. Otherwise you can expect one when I am back online.
- For any private communication regarding this course, please email me from your wooster.edu email address. This is mainly for identity verification purposes.

§F. Getting Help

MY OFFICE HOURS

Please come see me during my office hours if you have questions or just want to discuss something from class. These will be most effective if you have spent some time formulating your questions beforehand - often you will answer your own questions during that process! You can also contact me via Email or MS Teams with your questions. See the communication expectations section above (section [E](#)) for my 'business' hours!

See Moodle for office hour times and further instructions.

TBA'S OFFICE HOURS

Our TA for this class is TBA, a Junior at the college of Wooster. They will hold office hours on MS Teams and help you with class works and \LaTeX exercises. Their office hours are TBA.

§G. Academic Policies, Procedures & Support Services

Please see the pdf document titled [Academic Policies, Procedures & Support Services](#) on Moodle for college policies, community guidelines, and other support services offered by the college.

§H. Syllabus Changes

I reserve the right to make changes to this syllabus, if needed. Any changes will be announced to the class in a timely manner.