

## Course Information

Course Number:	Math 300 (Sections 903 and 904)
Course Title:	Foundations of Mathematics
Time:	(Section 903) MWF 12:40 – 1:30 pm / (Section 904) MWF 1:50 - 2:40 pm
Location:	Blocker 148
Credit Hours:	3

## Instructor Details

Instructor:	Prof. Anne Shiu
Office:	Blocker 601-E
E-Mail:	annejls@tamu.edu
Office Hours:	Mondays 10:30 – 11:30 a.m. Wednesdays 2:45 – 3:45 p.m. (*except 8/31 and 9/7) By appointment (ask one day in advance)

## Course Description

*Foundations of mathematics including logic, set theory, functions, and number theory – these topics form a bridge between computational mathematics and theoretical mathematics. We will cover topics from Chapters 1 – 6 in the textbook, and more if time permits.*

## Course Prerequisites

*Grade of C or better in MATH 148, MATH 152, or MATH 172 (or equivalent).*

## Special Course Designation

**This is a W (writing intensive) course**, which means that close attention will be paid to students' ability to write mathematical statements and proofs, mathematically and grammatically correctly. About one third of the grade will be based on writing assignments and the term paper (due Monday, December 5). **As this is a W course, no student can pass the course without a passing grade on the writing part (see below).**

## Course Learning Outcomes

*The purpose of the course is to provide students with important foundational skills that will prepare them to be successful in higher-level courses. Upon successful completion of the course, students will:*

- *Be able to construct and organize their mathematical reasoning.*
- *Develop skills for reading and writing mathematical proofs.*
- *Recognize and identify frequently used types of proofs.*
- *Master several mathematical concepts from logic and set theory.*
- *Identify concrete situations where the newly learned techniques can be applied.*
- *Recognize and recall the main definitions and results explained in the course.*
- *Develop problem-solving skills.*
- *Be able to present simple proofs, definitions and statements of theorems.*

## Textbook

*The Tools of Mathematical Reasoning*, by Tamara J. Lakins, 2016.

### Websites

<https://people.tamu.edu/~annejls/teaching/300-fall-22.html> (Homework is posted here.)

Also, we will use [www.piazza.com](http://www.piazza.com).

### Student Expectations

Students are expected to read the textbook and complete homework. For exams, students will be expected to work with key mathematical concepts, write short proofs, and understand important definitions and statements of theorems.

### Homework

Homework will be due each week on **Friday** at the beginning of class. *Staple your homework, and remove frayed edges from paper torn from spiral notebooks. Additionally, homework solutions must be clear and well-organized; the grader will impose a 10% penalty for solutions that are lacking in clarity.* Practice/challenge problems are optional and do not count toward your grade. Group work is encouraged, but please write up your solutions independently.

### Late homework policy

Late homework is *not* accepted (except with a University-approved absence; see Make-up Policy below). However, the lowest two homework scores will be dropped.

### Quizzes

On many **Wednesdays**, quizzes will be given, usually covering the lectures from the previous week. The lowest quiz score will be dropped.

### Exams

There will be two in-class midterms and one final exam:

- Midterm 1: Wednesday, September 21 (Week 5)
- Midterm 2: Wednesday, October 26 (Week 10)
- (Cumulative) final exam:
  - [Section 903] Monday, December 12 (10:30 - 12:30)
  - [Section 904] Tuesday, December 13 (3:30 - 5:30)

### Grading Policy

- Homework: 12%
- Writing homework\*: 13%
- Term paper\*: 20%
- Quizzes: 5%
- Midterm 1: 10%
- Midterm 2: 10%
- Final exam: 20%
- Midterm corrections: 10%

\* *As this is a writing-intensive course, no student can pass this course without a passing grade on the writing portion, which comprises the Writing homework and Term paper.*

### Final grades: did you accomplish the learning outcomes?

- A: 90%+
- B: 80–89%
- C: 70–79%
- D: 60–69%
- F: < 60%

The precise cut-offs will be determined when final grades are assigned.

### Attendance and Make-Up Policies

Attendance is essential if you wish to complete this course successfully.

- **Excused Absences:** University student rules concerning excused and unexcused absences, as well as makeups, can be found at <http://student-rules.tamu.edu/rule07>. In particular, make-up exams/quizzes or late homework/writing assignments will NOT be allowed unless a University approved reason is given to me in writing. Notification before the absence is required when possible. Otherwise (e.g. accident, or emergency), you must *notify me within two business days* of the missed exam, quiz, or assignment to arrange a makeup.

### Learning Support

- **The University Writing Center (UWC)** is a resource to help you develop and refine the communication skills important to your success in college and beyond. The UWC provides this help in a welcoming atmosphere that respects all Aggies' backgrounds and abilities. Our trained peer consultants are available to work with you on any kind of writing or speaking project, including research papers, lab reports, application essays, or creative writing, and at any stage of your process, whether you're deciding on a topic or reviewing your final draft. You can also get help with public speaking, presentations, and group projects. We can work with you in person at our Evans or BLCC locations or via Zoom or email. To schedule an appointment or to view our handouts, videos, or interactive learning modules, visit [writingcenter.tamu.edu](http://writingcenter.tamu.edu). If you have questions, need help making an appointment, or encounter difficulty accessing our services, call 979-458-1455 or email [uwc@tamu.edu](mailto:uwc@tamu.edu).
- **Math Learning Center (MLC)** offers various forms of support for Math 300, both online and face-to-face, including drop-in Help Sessions, Tutoring by Appointment, Week-in-Review sessions and other activities. Additionally, the MLC hosts an archive of Supplemental Material, such as Python tutorial videos and recorded review sessions

### Life

If your performance in the class is negatively affected by your experiences outside of class, please talk to me!

### University Policies

#### Attendance Policy

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments.

Please refer to Student Rule 7 in its entirety for information about excused absences, including definitions, and related documentation and timelines.

### Makeup Work Policy

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor.

Please refer to Student Rule 7 in its entirety for information about makeup work, including definitions, and related documentation and timelines.

Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor" (Student Rule 7, Section 7.4.1).

"The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence" (Student Rule 7, Section 7.4.2).

Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code. (See Student Rule 24.)

### Academic Integrity Statement and Policy

*"An Aggie does not lie, cheat or steal, or tolerate those who do."*

"Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one's work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case" (Section 20.1.2.3, Student Rule 20).

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at [aggiehonor.tamu.edu](http://aggiehonor.tamu.edu).

As commonly defined, plagiarism consists of passing off as one's own the ideas, words, writings, etc., which belong to another. In accordance with this definition, *you are committing plagiarism if you copy the work of another person or a solutions manual* and turn it in as your own. Any student found guilty of cheating, plagiarism, or other dishonorable acts in academic work is subject to disciplinary action. If you are caught cheating, you will receive a grade of "0" and it could result in your failing the course.

### Americans with Disabilities Act (ADA) Policy

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact Disability Resources in the Student Services Building or at (979) 845-1637 or visit [disability.tamu.edu](http://disability.tamu.edu). Disabilities may include, but are not limited to attentional, learning, mental health,

sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

### Title IX and Statement on Limits to Confidentiality

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see University Rule 08.01.01.M1):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, you will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University's goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with Counseling and Psychological Services (CAPS).

Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University's Title IX webpage.

### Statement on Mental Health and Wellness

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student's academic success and overall wellbeing. Students are encouraged to engage in proper self-care by utilizing the resources and services available from Counseling & Psychological Services (CAPS). Students who need someone to talk to can call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at [suicidepreventionlifeline.org](https://suicidepreventionlifeline.org).

### Statement on Masks and Vaccination

To help protect Aggieland and stop the spread of COVID-19, Texas A&M University urges students to be vaccinated and to wear masks in classrooms and all other academic facilities on campus, including labs. Doing so exemplifies the Aggie Core Values of respect, leadership, integrity, and selfless service by putting community concerns above individual preferences. COVID-19 vaccines and masking — regardless of vaccination status — have been shown to be safe and effective at reducing spread to others, infection, hospitalization, and death.