

MATH 332.001: METHODS OF MATHEMATICAL PROOF
SPRING 2020

CONTACT INFORMATION:

NAME : Dr. Hasan Coşkun
OFFICE : Binnion Hall BIN 314
PHONE : 903.886.5951
WEB : <http://faculty.tamuc.edu/hcoskun>
E-MAIL : hasan.coskun@tamuc.edu
OFFICE HOURS : MW 11:00a-1:50p and TR 12:30p-1:50p (BIN 314),
otherwise by appointment

DESCRIPTION AND POLICIES:

1. CLASS SCHEDULE: MWF 10:00-10:50a, BINB302. Please attend the **office hours** conveniently scheduled around class meetings for all questions.
2. TEXTBOOK: The following free text will be used in this course.
Mathematical Reasoning: Writing and Proof by Ted Sundstrom, Version 2.1.
A free online version is available at the Mathematical Reasoning website. You may also purchase a print copy at the same address.
3. WEBSITE & INTERNET: A Brightspace **course website** is created for the course which may be accessed from student myLeo accounts. All files and documents, lecture notes and outlines that the instructor shares with the class will be posted in the course website. All material posted or shared at the course website is **copyrighted** ©. You are allowed to retain one copy of each file for your personal use, but the files should not be distributed in any form without instructor's written consent.
4. COURSE DESCRIPTION: This course is on mathematical proof writing that helps deepen and broaden the knowledge of various aspect of discrete mathematics and will lay a foundation for further study of many fields in mathematics including topology, analysis, number theory, abstract algebra, probability, and computer science. **Prerequisite:** Math 2412 or Math 192.
5. TESTS & PROJECTS: There will be **two tests/projects** (100 points each) and a **comprehensive final** (200 points). Test problems would be similar to homework exercises. Late work is not accepted. **No make-up** test will be given without an official, written, university accepted excuse. The student must contact the instructor the next working day and present the documented excuse to make up a test.

6. **LEARNING OUTCOMES:** Students who complete this course successfully will
 - a) learn the **terminology** of mathematical proofs;
 - b) learn the **methods** employed in constructing mathematical proofs;
 - c) learn the **applications** of the methods to specific problems.

7. **SOFTWARE:** *Mathematica* software (Version 12) is **required** for the course. It will be used for carrying out computations in discussion sessions, homework exercises, exams and projects. **Personal student licenses** could be purchased online through the Wolfram Mathematica website ([click here](#)). Mathematica has recently introduced an **online version**. In principle, it should be the same with the desktop version, but the user interface looks different. You may use it at your own risk. We will be using the desktop version for all classroom presentations, and other activities.

8. **HOMEWORK:** Homework will be assigned in **every class** meeting on a regular basis. Selected assignments and problems will be graded only, but all homework problems should be worked out. The assignments will be turned in **electronically** (in form of a Mathematica notebook) by due dates into the Submission Folder for that week at the course website. Student name and homework number should be printed at the top of each notebook. You may work in groups unless otherwise instructed, however the paper you turn in must be your own work. **Late homework** is not accepted. **Attendance** may be used instead of assignments for the homework score. Homework and/or attendance is worth **50 points** of the total semester grade.

9. **TENTATIVE COURSE OUTLINE:** We cover **all or certain parts of these topics** from the textbook as time permits.
 1. Introduction to *Mathematica*
 2. Introduction to Writing Proofs
 3. Logical Reasoning
 4. Constructing and Writing Proofs in Mathematics
 5. Mathematical Induction
 6. Set Theory
 7. Functions
 8. Equivalence Relations
 9. Topics in Number Theory
 10. Finite and Infinite Sets

10. TENTATIVE EXAM SCHEDULE:

Test 1	100 pts	Friday February 21, 2020	in class
Test 2	100 pts	Friday April 10, 2020	in class
Final	200 pts	Monday May 4, 2020	10:30-12:30a

11. GRADING SCALE: All scores will be added and a **letter grade** will be assigned according to the following table.

A	406 - 450 pts
B	361 - 405 pts
C	316 - 360 pts
D	271 - 315 pts
F	0 - 270 pts

12. MISCELLANEOUS: Your enrollment in this course indicates that **you agree to observe** all the conditions and regulations of this syllabus and the Student Handbook. The test and homework scores may be filed to be used anonymously for educational research.

It is the **student's responsibility** to secure the software licenses and other resources (such as a personal computer with proper operating system to run the software, broadband internet access, etc.) to be able to complete and communicate all assignments, tests and projects to the instructor as required. The access information to Library resources, and **Help Desk** for technical support are available through the myLeo website. You should contact Wolfram Mathematica **technical support line** listed on their website for all installation, licensing, and other technical questions.

Policies pertaining to scholastic dishonesty are identical to TAMU-Commerce regulations given in the **Student Handbook**, available online at the university website (click here). All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment (See Student's Guide Handbook, Policies and Procedures, Conduct). Disruptive behavior (including use of electronic devices in classroom) and scholastic dishonesty in any form will not be tolerated.

Campus Concealed Carry Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a **concealed handgun** in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in **restricted locations**. For a list of locations, please refer to the policy (click here) at the university website, and/or consult your event organizer. Pursuant to PC 46.035, the **open carrying of handguns is prohibited**

on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 911.

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for **persons with disabilities**. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an **accommodation**, please contact: Office of Student Disability Resources and Services, Texas A&M University-Commerce, Gee Library, Room 162, Phone: (903) 886-5150 or (903) 886-5835, Email: StudentDisabilityServices@tamuc.edu, or Fax: (903) 468-8148.

Mathematica software offers various **accessibility** features, such as a screen reader, etc. Please visit Accessibility statement in the Documentation Center of the software for a full listing of these features.

Nondiscrimination notice: Texas A&M-Commerce will comply in the classroom, and in online courses, with all federal and state laws **prohibiting discrimination and related retaliation** on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment **free from discrimination** on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Any **possible changes** to be made in this syllabus by the instructor during the semester will be announced in class or by email.