

**COURSE SYLLABUS**  
**Math 3384 Spring 2018**  
**Foundations of Mathematics**

**COURSE:** Tuesday - Thursday 11:00 - 12:20  
**INSTRUCTOR:** Dr. Max Coleman  
**Office:** Room 417F, Lee Drain Building  
**Phone:** 294-1570  
**Email:** mcoleman@shsu.edu  
**Office Hours:** MTWTh 1:00 – 2:00  
Other Times by Appointment

**COURSE DESCRIPTION:** This course includes an introduction to logic, the concept of proof, proof techniques, mathematical induction, and sets. Math 2385 is required as a prerequisite for this course.

**COURSE OBJECTIVES:**

- Learn the fundamental concepts, principles, and skills of logic, proof, and sets.
- Learn to analyze and critically evaluate mathematical ideas and proofs.
- Develop a broader understanding and appreciation of the foundations and structure of mathematics.

**TEXT AND MATERIALS:**

There is no required text for the course. Handouts and other materials will be provided by the instructor as content is covered.

**Attendance Policy**

Attendance is *extremely* important. Regular and punctual attendance is expected of every student. As a prospective teacher, you must demonstrate your reliability and conscientious attitude by your faithful attendance.

Attendance will be taken every class. If you are late to class, it is your responsibility to notify the instructor immediately after class. Any student who is more than 30 minutes late to class will be counted absent. Tardies will count against your attendance record (3 tardies = 1 absence). Unless approved by the instructor, leaving class early will count as an absence. If absent or tardy, you are still responsible for all material covered in class, and you will need to check with a classmate about what was discussed. Serious health or family problems that are well documented will be handled individually. In addition to attending class faithfully, students are expected to put forth their best effort in this class.

**Make-up Tests:**

Unless approved by the instructor prior to the date of a test, there will be no make-up for a missed test. A missed final examination can be made up only by approval of the Dean of the College of Arts and Sciences or a higher administrative official.

**Major Examinations**

There will be three major examinations in this course and a final exam. You should notify the instructor in advance if you must miss a class during which time a major examination is scheduled. The instructor, at his discretion, may allow you to take the exam at a different time. Each exam will be worth 100 points.

## Final Examination

The final examination is comprehensive and is scheduled for **Thursday December 7 at 12:00 – 2:00.**

## Grading Plan

The course grade will be determined by scores on the three major exams and the final exam. Students with 2 or less absences will have the option of replacing their lowest major exam grade with the final exam grade. If the final exam grade is replacing a missed exam, the final exam grade will be used in place of only the missed exam. The letter grade will be determined as follows: (as a percent)

89.5 – 100	A
79.5 – 89.5	B
69.5 – 79.5	C
59.5 – 69.5	D
0 - 59.5	F

## Academic Dishonesty

All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials.

## Classroom Rules of Conduct

Students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university. *The use of cell phones is not permitted during class time*, except in emergencies. Cellular telephones and pagers must be turned off before class begins. Students are prohibited from eating in class, using tobacco products, making offensive remarks, reading newspapers, sleeping, talking at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction. Inappropriate behavior in the classroom shall result in a directive to leave class. Students who are especially disruptive also may be reported to the Dean of Students for disciplinary action in accordance with university policy.

## Use of Telephones and Text Messagers in Academic Classrooms and Facilities (University Policy)

The use by students of electronic devices that perform the function of a telephone or text messenger during class-time may be prohibited if deemed disruptive by the instructor to the conduct of the class. Arrangements for handling potential emergency situations may be granted at the discretion of the instructor. Failure to comply with the instructor's policy could result in expulsion from the classroom or with multiple offenses, failure of the course. Any use of a telephone or text messenger or any device that performs these functions during a test period is prohibited. These devices should not be present during a test or should be stored securely in such a way that they cannot be seen or used by the student. Even the visible presence of such a device during the test period will result in a zero for that test. Use of these devices during a test is considered de facto evidence of cheating and could result in a charge of academic dishonesty (see student code of conduct

<http://www.shsu.edu/students/guide/StudentGuidelines2010-2012.pdf#page=29>).

## **Visitors in the Classroom**

Unannounced visitors to class must present a current, official SHSU identification card to be permitted in the classroom. They must not present a disruption to the class by their attendance. If the visitor is not a registered student, it is at the instructor's discretion whether or not the visitor will be allowed to remain in the classroom.

## **Americans with Disabilities Act**

It is the policy of Sam Houston State University that no otherwise qualified disabled individual shall, solely by reason of his/her handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any academic or Student Life program or activity. Disabled students may request assistance with academically related problem stemming from individual disabilities by contacting the Director of the Counseling Center in the Lee Drain Annex or by calling 936-294-1720.

## **Religious Holidays**

A student who is absent from class for the observance of a religious holy day will be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence. Students will be excused to travel for observance of a religious holy day. A student who wishes to be excused for a religious holy day must present the instructor with a written statement describing the holy day(s) and the travel involved. Upon receiving the statement the instructor will provide the student with a written description of the deadline for the completion of missed exams or assignments.

## **Syllabus Revision**

The instructor reserves the right to revise any part of this syllabus as deemed necessary throughout the semester. Revision, if necessary, will be announced.

## MATH 3384 COURSE SCHEDULE (TENTATIVE)

### TOPIC

#### **Unit 1:**

Standards  
Statements, Logical Operators, and Truth Tables  
Logical Equivalence, Tautologies, and Contradictions  
Necessary and Sufficient Conditions  
Quantifiers  
The Mathematics of Logic  
**Exam #1**

#### **Unit 2:**

Introduction to Mathematical Proofs  
Proof by Contrapositive  
Proof by Contradiction  
Mathematical Induction  
**Exam #2**

#### **Unit 3:**

Sets, Subsets, and Set Operations  
Basic Set Properties and Complement  
Power Sets and Relations  
Equivalence Relations  
Functions  
Operations  
**Exam #3**

**Final Exam: 12:00-2:00 Thursday May 10**