



# MATH 543- Abstract Algebra I

## Course Syllabus: Fall 2018

### INSTRUCTOR INFORMATION

Instructor: Padmapani Seneviratne, Ph.D.  
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Phone: 903- 886-5952  
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Office Hours: M 3:00 – 5:00 pm, TR 11:00 – 12:30 or by appointment.

Class Schedule: MW: 5:00-6:15 pm

Location: BA 244

### COURSE INFORMATION

**Textbook:** Abstract Algebra, Dummit and Foote (3<sup>rd</sup> edition), Wiley, ISBN-10: 0471433349  
ISBN-13: 978-0471433347.

Chapters 1, 2, 3, 4, 5 and 7 will be covered.

#### Technology:

- Software: Magma/SageMath – will be provided.

**Course Description:** Groups, Subgroups, quotient Groups and Homomorphisms, Group Actions.

Prerequisites: MATH 334 or MATH 550, or Consent of Instructor.

**STUDENT OUTCOMES:** Upon successful completion of this course a student will:

- 1). Define, and interpret basic concepts, fundamental properties and the algebraic structures of groups, subgroups, quotient groups, group homomorphisms and group actions.
- 2). Verify and prove some important theorems in group theory including Lagrange's Theorem, Cayley's Theorem, isomorphism theorems, and the classifications of finite groups with small number of elements.

- 3). Define and explain the basic concepts, properties and examples of subgroups, cyclic groups, symmetric groups, and dihedral groups.
- 4). Define, explain and analyze basic concepts and properties and examples concerning cosets, normal subgroups, and quotient groups.
- 5). Use a computer algebra system to construct and evaluate groups.
- 6). Learn applications of groups and related structures.

<b>COURSE REQUIREMENTS</b>
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**Instructional:** Lecture/software

**Attendance:** It is expected that you attend classes daily and it is your responsibility to sign the daily class roll sheet. It is expected that you follow the guidelines set forth by the Class Attendance Policy in the current catalogue.

**Exams:** There will be 2 midterm exams, homework and a comprehensive final exam for this course.

Exam 1: Wednesday, October 3<sup>rd</sup> (6<sup>th</sup> week)

Exam 2: Wednesday, November 14<sup>th</sup> (12<sup>th</sup> week)

Final Exam: TBA

<b>COURSE GRADES</b>
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**Grading policy:** The course grade consists of

Midterm Exams:	50%
Home work:	20%
Final Exam:	30%
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Total:	100%

**Grading Scale:**

A: 90 – 100%, B: 80 – 89%, C: 70 – 79%, D:60 – 69%, F: 0 – 59%

## **COURSE AND UNIVERSITY PROCEDURES/POLICIES**

“All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment.”

(Student’s Guide Handbook, Policies and Procedures, Conduct.)

Rude and/or disruptive behavior will not be tolerated.

No electronic devices (except calculators and laptops for note taking) are allowed during class time.

**Please keep your phones in silent mode and inside your bag or pocket.**

### **Withdrawal Policy:**

Concerning the deadlines and consequences of withdrawals please check on:

<https://ems.tamuc.edu/MasterCalendar/MasterCalendar.aspx>

### **Make-up work:**

No late tests will be given. If you miss a test, the final will be used to replace that score. No late homework will be graded and weekly quizzes will not be repeated if missed. However, a percentage of the homework and quiz grades will be dropped to cover days when an absence is unavoidable.

### **Getting Help:**

You are welcome and encouraged to use office hours if you need any help during the semester.

### **Academic Integrity:**

Texas A&M University –Commerce has explicit rules and regulations governing academic dishonesty and academic misconduct. These policies are stated in details in the student’s Guide Handbook. Each students is expected to read this document and abide by the contained polices. These university polices will be followed in class. The minimum penalty an act of academic dishonesty will be a grade of 0 on the examination or homework assignments.

## **University Specific Procedures**

### **Students with Disabilities**

Students with Disabilities information: 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:

Student Disability Resources & Services  
Texas A&M University-Commerce  
Gee Library, Room 162  
Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

[StudentDisabilityServices@tamuc.edu](mailto:StudentDisabilityServices@tamuc.edu)

## **Nondiscrimination Statement**

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.

## **Student Conduct**

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. (See *Code of Student Conduct from Student Guide Handbook*).

## **Campus Concealed Carry Statement**

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 [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

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 9-1-1.

## Weekly Schedule (Tentative)

Week 1-3: chapters 0, 1

Week 4-6: chapter 2

Exam 1

Week 7-9: chapter 3

Week 10-12: chapter 4

Exam 2

Week 13-15: chapters 5,7

Final Exam