**MATH 4391 - 020 - Abstract Algebra II - Fall 2017**

**Instructor:** Jesse Taylor  
**Office Hours:** M: 11:00-12:00, 3:00-3:45  
T: 9:15-11:00  
W: 11:00-12:00, 3:00-3:45  
Th: 9:15-11:00  
F: 11:00-2:00  
and by appointment

**Office:** MCS 219E  
**Email:** jesse.taylor@angelo.edu  
**Our Classroom:** MCS 219E  
**Meeting Times:** 10:00-10:50 F (and as needed)


**Course Content:** Selected sections from chapters 1, 4, 5, 8, 9, 10, and 11 will be covered, as well as additional topics as time permits.

**Homework:** Homework will be assigned regularly throughout the semester. In general, I will assign a problem set each week. **No late homework will be accepted.** It is always your responsibility to attend class and know when an assignment is due and to make sure it is turned in or taken on time.

**Tests:** We will have one test. It will constitute the “final project” portion of this course and will be taken during our final exam slot or at another time as arranged by the instructor and students.

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**Grading:** Your grade in this class will determined based on the following grading rubric.

- Homework: 75%
- Test: 25%

Your final letter grade in this class will be determined based on a ten-point grading scale.

**Attendance:** Attendance will be taken regularly, and each student’s absences will be reported with their final grade at the end of the semester.

**Technology:** Unless you have special accommodations documented with the Student Life office, **no cell phones, tablets, laptops, games, or other electronic devices may be used in the classroom at any time.**

**Academic honesty:** Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is available on the web at [http://www.angelo.edu/forms/pdf/honorcode5.pdf](http://www.angelo.edu/forms/pdf/honorcode5.pdf).

**Study Aids:**
- Feel free to come by my office for help. I will definitely be near my office during my office hours (or there will be a note telling you when I will be back). If my office hours are not convenient for you, meet with me to arrange for another time that is more convenient.
Notes:

• A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. (http://www.angelo.edu/opmanual/ -- OP 10.19)

• Persons with disabilities which may warrant academic accommodations must contact the Student Life Office, in order to request such accommodations prior to any accommodations being implemented. You are encouraged to make this request early in the semester so that appropriate arrangements can be made. (http://www.angelo.edu/opmanual/ -- OP 10.15)

• In the event that the university is closed for a scheduled class time, whatever was scheduled for that day and/or whatever was due that day will be scheduled and/or due on the next scheduled class time.

• All electronic correspondence will be sent to your ASU e-mail account unless other arrangements are made.

• If you do not receive a graded homework assignment or an exam on the day they are returned, please come by my office to pick them up.

• Good luck. I want you to succeed in this course. If at any point during the semester you feel as if you do not understand the material, please come talk with me as soon as possible. An ounce of prevention is worth a pound of cure.

All items and dates in this syllabus are subject to change as the semester progresses. Students will be notified in class of any changes, and the changes will not be updated within this syllabus.
Student Learning Outcomes

1. The students will demonstrate factual knowledge including the mathematical notation and terminology used in this course. Students will read, interpret, and use the vocabulary, symbolism, and basic definitions used in abstract algebra, including ideas related to groups, rings, fields, and modules.

2. The students will describe the fundamental principles including the laws and theorems arising from the concepts covered in this course. Students will develop and apply the fundamental properties of abstract algebraic structures, their substructures, their quotient structure, and their mappings. Students will also prove basic theorems such as Cayley’s theorem and the three Sylow theorems.

3. The students will apply course material along with techniques and procedures covered in this course to solve problems. Students will use the facts, formulas, and techniques learned in this course to prove theorems about the structure, size, and nature of groups, rings, fields, modules, subrings, ideals, quotient rings, and the associated mappings. Students will also solve problems about the size and composition of structures and substructures listed above.

4. The students will apply course material along with techniques and procedures covered in this course to solve problems. Students will use the facts, formulas, and techniques learned in this course to prove theorems about the structure, size, and nature of groups, rings, fields, modules, and the associated mappings.

Course Content


1. Introduction to Groups
4. Group Actions
5. Direct and Semidirect Products of Abelian Groups
8. Euclidean Domains, Principle Ideal Domains, and Unique Factorization Domains
9. Polynomial Rings
10. Introduction to Module Theory
11. Vector Spaces

Additional topics will be covered as time permits.
Student Disability Services

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA) and subsequent legislation.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student’s responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at ADA@angelo.edu. For more information about the application process and requirements, visit the Student Disability Services website at www.angelo.edu/ADA. The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dallas Swafford
Director of Student Disability Services
Office of Student Affairs
325-942-2047
dallas.swafford@angelo.edu
Houston Harte University Center, Room 112

Below is an approximate guide to what we will cover on each day of the semester. These topics are subject to change.

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<td>Dihedral groups and p-Sylow Theorems</td>
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<td>Direct and Semidirect products</td>
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