I. COURSE INFORMATION

1. Meeting Time & Place: TR 5:30 to 6:45, IH 157 (subject to change).
2. Professor: Dr. George Tintera
3. Office Phone: (361) 825-6028
4. Office Address: CI 303
5. E-MAIL Address: george.tintera@tamucc.edu
6. Web Page Address: http://www.tamucc.edu/~tintera/
7. Office Hours: TBA. And by appointment. Office hours subject to meetings related to other duties on campus. They may change during the semester.

II. COURSE DESCRIPTION

Fundamentals of set operations, maps and relations, groups, rings and field theory, Topics include groups, cosets, homomorphisms, isomorphisms, direct products of groups, and rings, integral domains, field of quotients, fundamental properties of integers, the ring of integers modulo n and rings of polynomials. Applications.

III. PREREQUISITES for the COURSE

MATH 3311 and MATH 3313

IV. TEXT and OTHER SUPPLIES REQUIRED


V. COURSE OBJECTIVES

This course is designed to enable students to:

1. Understand the importance of sets and mappings in algebra and other areas of mathematics.
2. Understand the properties of the most important algebraic structures, and to recognize the relationship between them.
3. Use physical models to discover properties and relationships
4. Read and reproduce proofs for relevant theorems, and apply these techniques to construct arguments and proofs for textbook and other problems.
5. Perform self-guided learning to support the development of independent thinking, and participate in classroom discussions and presentations to develop communication skills.
6. Establish connections between Modern Algebra and other topics in mathematics.

VI. INSTRUCTIONAL METHODS AND ACTIVITIES
The heart of the instructional method for this course is student activity. Students will be challenged to solve many problems from the text. Finally, the instructor will lecture when necessary to go over material as needed and present solutions to a variety of problems.

VII. EVALUATION AND GRADE ASSIGNMENT

Course grades will be based on homework (25%), group work (10%), class discussion (5%), Project (10%), semester exams (20%), final exam (30):

- **Homework** will be assigned at each class meeting. Written solutions will be graded as 'Done' or 'In Progress.' Work graded as In Progress can be turned in within a week for regrading. Exercises not attempted or not redone within a week will not be graded. This can be done indefinitely until the last week of classes. For each assignment, each Done problem will earn one point. The homework grade is the total number of points earned divided by the number of points possible.
- **Challenge Homework.** Students can earn extra points by solving problems that other students have not completed by presenting their solutions to the class.
- **Groupwork** is graded by self assessment. You will get a form ever couple of weeks to record the extent of your contributions and your grade. The instructor reserves the right to modify your assessment.
- **Class Discussion** will be graded but is strongly encouraged. Participation is the basis for the grade.
- **Semester Exams** will take place as scheduled below. The second will be weighted 3 times that of the first.
- **Projects** will be assigned after Spring Break and due at the end of the month. You may work with up to 2 other students on the project. Each group will work on the material in a later chapter of the text and follow up on suggested resources. You will get more explicit directions in due course.
- The **Final Exam** will be held at the time designated for our course. It will be comprehensive. Plan to be there.

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<thead>
<tr>
<th>Grade</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>F</th>
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<tbody>
<tr>
<td>Score</td>
<td>90% - 100%</td>
<td>80% - 89%</td>
<td>70% - 79%</td>
<td>60% - 69%</td>
<td>0% - 59%</td>
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VIII. TENTATIVE COURSE SCHEDULE

<table>
<thead>
<tr>
<th>Week of</th>
<th>Tuesday</th>
<th>Thursday</th>
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<tbody>
<tr>
<td>Jan 9</td>
<td>No Class</td>
<td>Why Algebra</td>
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<tr>
<td>Jan 16</td>
<td>Operations</td>
<td>Groups</td>
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<td>Jan 23</td>
<td>Properties of Groups</td>
<td>Proofs of Group Properties</td>
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<td>Jan 30</td>
<td>Subgroups</td>
<td>Generators and Relations</td>
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<tr>
<td>Feb 6</td>
<td>Functions</td>
<td>Permutations</td>
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<tr>
<td>Feb 13</td>
<td>Permutations of Finite Sets</td>
<td>Isomorphisms</td>
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IX. CLASS POLICIES

- This class is run for the mathematical development of all participants. All students must accept responsibility for participating and consequences of not participating.
- University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test can result in a failing grade on an assignment, reporting to the Dean of Students and a failing grade for the class.
- I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. (Friday, March 30) is the last day to drop a class with an automatic grade of “W” this term.
- Please turn off phones and beepers before coming to class.
- Attendance is expected. It is the only way to do in-class work.
- Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.
- All absences from the midterm and final exam will be considered unexcused unless they are documented in advance as excusable with the instructor or as soon as possible in the
case of emergencies. No credit will be awarded for unexcused absences from the final exam or midterms. Final exams can only be made up after June 1.

- **Notice to Students with Disabilities:** Texas A&M University-Corpus Christi complies with the Americans with Disabilities Act in making reasonable accommodations for qualified students with disabilities. If you suspect that you may have a disability (physical impairment, learning disability, psychiatric disability, etc.), please contact the Services for Students with Disabilities Office, located in Driftwood 101, at 825-5816. If you need disability accommodations in this class, please see me as soon as possible.

- **Grade Appeal Process.** As stated in University Rule 13.02.99.C2, Student Grade Appeals, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Rule 13.02.99.C2, Student Grade Appeals, and University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules Web site at [http://www.tamucc.edu/provost/university_rules/index.html](http://www.tamucc.edu/provost/university_rules/index.html). For assistance and/or guidance in the grade appeal process, students may contact the Office of Student Affairs.