MATH 533: Algebraic Structures
Course Syllabus

Effective Date: Summer 2012
Instructor: Dr. Ugur Tanriver
Office: SCIT 104G
Office Phone: 903-334-6659 (Please leave a message if necessary)
Meeting Time: TR: 1:00 pm- 3:00 pm
Office Hours: TR: 11:00 am – 1:00 pm
W: 10:00 am- 4:00 pm
the other times by appointment only
E-mail Address: utanriver@tamut.edu
Course Number: MATH 533
Course Title: Algebraic Structures
Semester Credit Hours: 3SCH
Catalog Course Description: Careful study of common algebraic structures. An emphasis will be on those structures supporting the mathematics K-12 curriculum. Technology will be used where appropriate.
Pre-requisite: At least 18 hours of undergraduate mathematics including a proof-oriented course.

Required Textbook: An Introduction to Abstract Algebra with Notes to the Future Teacher by Nicomedia, Sutherland, and Towsley (2007), Prentice Hall

Student Learner Outcomes: After completion of this course the student will be able to:
1. Apply Techniques of Abstract Algebra for the solution of mathematical problems
2. Solve problems related to Number Theory.
4. Solve problems related to Systems of Numbers.
5. Solve problems related to Polynomials
7. Solve problems related to Normal Subgroups.
8. Solve problems related to Quotient Groups.
10. Solve problems related to Field Theory.
11. Solve problems related to Ruler and Compass Constructions.
Course Objectives: The primary objective in this course is to prepare students with appropriate materials for the Abstract Algebra related to the solution of mathematical problems such as Number Theory, Modular Arithmetic, Polynomials, Group Theory, Galois Theory, Field Theory, and Ruler and Compass Constructions. In this course students will:

1. Develop a thorough understanding of the mathematics content for Abstract Algebra and methods for the solution of mathematical problems such as Modular Arithmetic, Systems of Numbers, Polynomials, Normal Subgroups and Quotient Groups, Ruler and Compass Constructions.
2. Formulate explanations of that content in understandable terminology.
3. Develop greater facility to think about mathematics and mathematical problem solving; and become independent in doing mathematics as well as Abstract Algebra.

Complete Course Schedule:

Week 1: Number Theory. Work on Homework.
Week 2: Modular Arithmetic. Work on Homework.
Week 3: Systems of Numbers. Work on Homework.
Week 4: Polynomials. Work on Homework and Test 1.
Week 6: Group Theory. Work on Homework.
Week 7: Normal Subgroups and Quotient Groups. Work on Homework.
Week 8: Galois Theory. Work on Homework and Test 2
Week 9: Field Theory and Ruler and Compass Constructions. Work on Homework.
Week 10: Review for Comprehensive Exam and Comprehensive Exam

Disability Accommodations: Students with disabilities may request reasonable accommodations through the A&M-Texarkana Disability Services Office by calling 903-223-3062.

Academic Integrity: Academic honesty is expected of students enrolled in this course. Cheating on examinations, unauthorized collaboration, falsification of research data, plagiarism, and undocumented use of materials from any source constitute academic dishonesty and may be grounds for a grade of ‘F’ in the course and/or disciplinary actions. For additional information, see the university catalog.

A&M-Texarkana Email Address: Upon application to Texas A&M University-Texarkana an individual will be assigned an A&M-Texarkana email account. This email account will be used to deliver official university correspondence. Each individual is responsible for information sent and received via the university email account and is expected to check the official A&M-Texarkana email account on a frequent and consistent basis. Faculty and students are required to utilize the university email account when communicating about coursework.

Drop Policy: University Drop Policy: To drop this course after the 12th class day, a student must complete the Drop/Withdrawal Request Form, located on the University website http://tamut.edu/Registrar/droppingwithdrawing-from-classes.html) or obtained in the Registrar’s Office. The student must submit the signed and completed form to the instructor of each course indicated on the form to be dropped for his/her signature. The signature is not an “approval” to drop, but rather confirmation that the student has discussed the drop/withdrawal with the faculty member. The form must be submitted to the Registrar’s office for processing in person, email Registrar@tamut.edu, mail (P. O. Box 5518, Texarkana, TX 75505) or fax (903-223-3140). Drop/withdraw forms missing any of the required information will not be accepted by the Registrar’s Office for processing. It is the student’s
responsibility to ensure that the form is completed properly before submission. If a student stops participating in class (attending and submitting assignments) but does not complete and submit the drop/withdrawal form, a final grade based on work completed as outlined in the syllabus will be assigned.

**Evaluation:** There will be two tests, several homework assignments, and Comprehensive Exam over ALL chapters discussed in class:

Test 1: 25%
Test 2: 25%
ALL Homework: 25%
Comprehensive Exam: 25%

Dates for Test 1, Test 2, Homework, and Comprehensive Exam will be announced later.

**Students MUST submit homework on time.**

**Note:** The Comprehensive Exam is over ALL chapters that were discussed in class.

The final grade will be based on the following scale:

A: 90% or greater
B: 80% to less than 90%
C: 70% to less than 80%
D: 60% to less than 70%
F: Less than 60%

**Disclaimer:** The above procedure is subject to change in the event of extenuating circumstances.