MTH233-01

Number Systems II

Spring 2022

Class Time and Location: M W 4:30 -5:45 S 245

Instructor: Marsha Jenkins, B.S.E. +18, Henderson State University
Office Location: Johnson Learning Commons 205
Office Hours: MW 8:00 – 12:00, 1:00 – 4:15
TR 8:30 – 12:00, 1:00 – 5:00
F 8:00 – 2:15
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Resources:
Text: *Mathematics for Elementary Teachers – A Contemporary Approach, 8th Edition,* Musser, Burger, and Peterson, Copyright 2008. ISBN # 13 – 978 – 0470 – 10583 - 2

Required Materials:
TI-83 or 84 Calculator or a calculator app on your phone, 3-ring notebook with pockets, paper, graph paper, mechanical pencils with good erasers or erasable ink pens such as FriXion, small package of colored pencils or multiple colors of FriXion pens, small ruler or straight edge.

Course Description: Concepts of geometry, data analysis, probability and statistics appropriate for P-8 grade levels will be developed. Topics in geometry will include appropriate geometric terminology, lines, angles, plane curves, polygons and other plane regions, polyhedra and other space figures, measurement concepts and skills, constructions (time-permitting), transformations, congruence, similarity and geometric reasoning. Topics in data analysis, probability and statistics will include collecting, organizing, and interpreting data, statistical graphs, statistical measures, and discrete probability with applications. MTH233 contains mathematics content, teaching techniques, mathematics manipulatives, and technology with emphasis on problem solving, reasoning, communication, connections, and representation. This course is designed to better prepare future elementary and middle school teachers.

Program Outcomes: The purpose of the Associate of Arts Program is to provide students with the knowledge and critical thinking skills that will enable students to analyze problems, arrive at intelligent conclusions, and make reasoned choices in their professional and personal lives.

- Students will demonstrate competency in mathematics, including analytical and occupational skills.
- Students will apply technological skills to process information.
- Students will be prepared to compete academically upon transfer to a four-year institution.

Rationale: An objective of post-secondary education is to provide a core of knowledge that is shared with most educated people. By studying and developing a deeper understanding of mathematical computations, students can better analyze, problem solve, and prepare critical

thinking strategies for real world scenarios. Technological skills with the graphing calculator are necessary for future math courses.

Course Objectives: Upon successful completion of MTH 223 Number Systems II, the student should be able to:

1. Organize, interpret, and analyze statistics from many types of graphs and create graphs.
2. Calculate and apply probability and counting techniques to real-world problems.
3. Recognize and analyze basic geometric shapes, including polygons and polyhedra, and various transformations.
4. Demonstrate understanding of measurement skills by calculating length, perimeter, area, surface area, and volume.

Students will demonstrate mastery of the above objectives by grades of C or above on portfolio, presentations, quizzes, tests, and final exam.

Topical Course Outline and Proposed Schedule :

Chapter 10: Statistics
- 10.1 Organizing and Picturing Information
- 10.2 Misleading Graphs and Statistics
- 10.3 Analyzing Data

Chapter 11: Probability
- 11.1 Probability and Simple Experiments
- 11.2 Probability and Complex Experiments
- 11.3 Additional Counting Techniques

Chapter 12: Geometric Shapes
- 12.1 Recognizing Geometric Shapes
- 12.2 Analyzing Shapes
- 12.3 Properties of Geometric Shapes: Lines and Angles
- 12.4 Regular Polygons and Tessellations
- 12.5 Describing Three-Dimensional Shapes

Chapter 13: Measurement
- 13.1 Measurement with Nonstandard and Standard Units
- 13.2 Length and Area
- 13.3 Surface Area
- 13.4 Volume

Week	Proposed Schedule of Topics/Activities by Book Section Number	Dates
1	Discuss syllabus. Pre-Test. Section 10.1	1/18
2	Sections 10.2 – 10.3	1/23 & 1/25
3	Review & test Ch. 10. Section 11.1	1/30 & 2/1
4	Sections 11.1 & 11.2	2/6 & 2/8

5	Section 11.3 & Review Ch 11	2/13 & 2/15
6	2/20 No class -online work – 12.1. 2/22 Test Ch. 11., Section 12.2	2/20 & 2/22
7	Sections 12.3 & 12.4	2/27 & 3/1
8	Section 12.5 & Review Ch. 12	3/6 & 3/8
9	Test Ch. 12. Section 13.1	3/13 & 3/15
	SPRING BREAK . . . MARCH 20 - 24	
10	Section 13.1-13.2	3/27 & 3/29
11	Section 13.2-13.3	4/3 & 4/5
12	Review & Test Chapter 13	4/10 & 4/12
13	Other AR Standards-Geometric concepts	4/17 & 4/19
14	Other AR Standards-Geometric concepts, student projects	4/24 & 4/26
15	Other Geometric concepts, student projects, quiz, review for final exam	5/1 & 5/3
16	Final exams May 8 – 11.	

Important Dates:

February 13 (M)	Four-week risk reports due UA Rich Mountain
February 20 (M)	Winter Break (No classes/offices open)
March 13 (M)	Eight-week (Mid-term) grades due UA Rich Mountain
March 20-24 (M-F)	Spring Break (no classes/office open W)
April 17 (M)	Twelve-week risk reports due
May 5 (F)	Last day of classes
May 8-11 (M-R)	Final exams
May 11 (R)	Grades due by 4:30 p.m.

Course Conduct: The class will be taught using a combination of lecture, group interaction, question and answer approach, and independent study. New topics will be demonstrated using the board, document camera with smart board, and many manipulatives to support development of concepts in a concrete fashion. Students are strongly encouraged to discuss concepts and examples as opportunities are presented during instructor presentation. It is the student's responsibility to inform the instructor when a concept is confusing or otherwise unclear.

UA Rich Mountain Credit Hour Calculator: For every course credit hour, you should expect to spend at least three clock hours per week of concentrated attention on course-related work, including but not limited to time attending class, as well as out-of-class time spent completing homework, seeking help from instructor or tutors, preparing for upcoming quizzes/tests/exam, reviewing material, problem solving, and organizing your notebook. For a three-hour course, a typical student should expect to spend at least nine hours per week dedicated to this course. This includes the time spent in class. Please see credit hour calculator attached to end of syllabus.

Course Requirements / Evaluation (Grading):

Tests & Quizzes (announced or unannounced) are 40% of your final grade. Four tests and a quiz are scheduled. However, additional quizzes may be given. The test average will be calculated by dividing the student's total test/quiz points earned by the total points possible.

Daily Grades: Homework assignments, homework quizzes, syllabus quiz, and projects are 38% of your final grade. Homework may be submitted via Blackboard or in person. Due dates are posted in Blackboard. Late homework will be penalized by 10% of the total available points per day for up to five days. After five days, late homework will not be accepted. The daily grade average will be calculated by dividing the student's total points earned by the total points possible.

Criteria for Credit: Homework must be neat and complete. Each problem assigned has three parts: **1) the original problem <u>with figures drawn</u>** (only critical information from word problems is required)**, 2) <u>all steps or an explanation</u> of how to arrive at the correct answer, and 3) the final answer.** ***<u>Answers alone are not acceptable</u>***. Use pencils or Frixion pens, and straight edge paper (no ruffles please). Write the lesson number at the top of the first page. Label each page with your name and lesson number in the top, right corner. **Leave a blank line between problems.** Box or circle your correct answers as you check them. *You will not receive credit for any problems not meeting the criteria for credit described above.*

Attendance: Attendance is 2% of your final grade and is calculated by the percentage of classes attended. Point(s) are deducted for tardiness. Absences due to official school activities do not apply.

Final Exam is 20% of your final grade. The final exam is comprehensive. Problems are similar to chapter test problems.

Grades are assigned based on the following percentage scale.

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

Attendance / Make-up Policy: No make-up exams will be given. If you miss an exam, the missing grade will be replaced by the final exam score at the end of the course. Deliberately missing an exam is not advised due to the comprehensive nature of the final exam and the possibility of missing a future exam. See COVID-19 Protocols. The student is responsible for instruction missed during class by studying the material in the book, seeking help from the teacher and/or student support services, and by getting class notes from the teacher or another student.

Cell Phones: The use of cell phones and smart watches in the classroom is prohibited. Turn cell phone off or set on vibrate and store it out of sight during class time. If you are expecting an emergency call, please, notify instructor before class. If you receive the call, please, exit the classroom to take the call. You may return to the classroom after the call. During tests, cell phones and smart watches will be stored away in student's belongings. See Academic Dishonesty paragraph.

Academic Dishonesty: Any suspicion of academic dishonesty will result in no credit for the paper/test in question. Having a cell phone or smart watch in view during a test will result in a zero on the test.

COVID-19 Protocols: For your protection, and the protection of others, please adhere to the following COVID-19 protocols until further notice.

Face Mask Policy: As per the direction of the University of Arkansas Board of Trustees

Food and Drink: Food and drinks, including water are not allowed in the classroom at any time. This eliminates the need to remove masks and potentially expose others.

Attendance: Daily attendance is mandatory. In the event a student is quarantined, the student will automatically shift to an all-Zoom attendance format for the quarantine period. It is the student's responsibility to immediately notify the instructor if they will not be present for class, and a doctor's note is required. In the event the instructor is quarantined, the entire class will shift to an all-Zoom/online format for the quarantine period. Students will be notified accordingly. Any potential absence is to be shared with the instructor.

Tests: In the event a test is given while a student is quarantined, the student may test via Zoom while the test is being taken in the classroom. The student must keep the camera on throughout the test and submission of the test. Immediately prior to testing, the student must show the proctor their work area. The student may not have anything in the student's work area except writing utensils, a clean sheet of paper, and an approved calculator. Turning off the camera will be considered Academic Dishonesty. Should internet access be lost during the test, the test will be invalidated and the Attendance/Make-up policy, above, will apply.

Technology Concerns: Students with access concerns are expected to communicate with their instructors. Additionally, students can access the wi-fi from the South parking lot near the Ouachita Center. Students with access issues are encouraged to access course Zoom sessions from the parking lot, if needed. Students would be expected to drive to campus under normal classroom conditions. While it is not ideal, it does ensure reliable access and regular course participation. Students may use personal cell phones/devices to attend Zoom sessions. However, students have the option to check out campus computers from the library (Johnson Learning Commons).

Social Distancing: Students are to follow the social distancing guidelines as outlined by the Arkansas Department of Health (ADE), the Centers for Disease Control (CDC). And the UA Board of Directors. Additionally, UARM staff may clearly mark hallways, arrange classroom furniture, and remove keyboards from workstations to adhere to such guidelines. Students are asked not to assemble in the hallway before class. Please come to class when your class is scheduled to start. When leaving the classroom, students will be asked to exit in an orderly manner to allow social distancing between each person.

Seating arrangements: Students are not to sit at workstations where keyboards have been removed. Furthermore, due to contact-tracing regulations required by the ADE and CDC, students are to sit in the **same** seat/location **each** time they come to class.

Cleaning procedures: Students are expected to assist in keeping the classroom clean. Students are to clean their workstations each day upon entry and before leaving.

Disinfecting wipes will be provided. Students are expected to wear gloves when using computers and keyboards, as these objects are more difficult to clean without damaging them. Gloves will be provided. To prevent cross-contamination, students are to remove and dispose of gloves upon leaving the classroom.

Computer and On-Campus Resources: Computer labs with printers are available in several places on campus including the Johnson Learning Commons. UA Rich Mountain offers students assistance with quality tutors available in the Student Support Services (SSS) in the Johnson Learning Commons. You may access www.tutor.com/uarichmountain nights and weekends when SSS is not available.

Disability Policy: It is the policy of UA Rich Mountain to accommodate students with disabilities, pursuant to state and federal law. Any student with a disability who needs accommodations should contact the Vice Chancellor for Student Affairs Office, 394-7622, ext. 1460.

Arkansas Clean Air Act: In compliance with the Arkansas Clean Air Act, UA Rich Mountain is a smoke and tobacco free facility. Students and guests are to refrain from the use of all tobacco products while on campus.

Student Misconduct: Students committing misconduct are subject to disciplinary sanction(s) and/or restrictions. Misconduct or prohibited behavior includes, but is not limited to endangerment, harassment, disruption, sexual misconduct, illegal drugs and/or alcohol, fire or safety issues, gambling, property violations, computer violations or other violations as listed in the UA Rich Mountain catalog.

UA Rich Mountain Mission: The University of Arkansas Rich Mountain provides transformative education to all learners.

Change: This syllabus is subject to change as deemed necessary by the instructor.

Credit Hour Requirement Calculator

Course Information			
Department, Course Number	Mathematics	MTH223	
Course Title	Number Systems II		
Credit Hours	3		
Mode of Delivery	Traditional		
Weeks in Part of Term	15		
Level of Reading Material	Advanced/Scientific/Technical (2)		2
Reading Level of Students	Average Student (2)		2
Average Pages per Hour	11		

		Enter either week or term, not both	
Contact Hours	**Hours/Week**	**Hours/Term**	**Total Hours**
Lecture/Recitation		45	45

	Pages Asg'd	Hours/Week	Hours/Term	
Syllabus Items				
Weekly Homework Assignments		4		60
Prepare for Chapter Tests			12	12
Prepare for Final exam			4	4
Study Assigned Examples	87			7.9
				0
				0
				0
				0
				0
				0
Total Hours				128.9
Required Hours				112.5
Difference				Ok + 16.4