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 – 1:00, 3:00 – 4:15
TR 8:00 – 12:30, 1:30 – 5:30
F 8:00 – 2:15
Office Phone: (479) 394-7622 ext. 1623
Cell Phone: (870) 584-9217
email: mjenkins@uarichmountain.edu

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, 3-ring notebook with paper, graph paper, cardboard folder, mechanical pencils with good erasers or erasable ink pens such as FriXion, small pack colored pencils, small ruler or straight edge.

Course Description: This course includes development of concepts and operations of decimals and measurement, as well as exploration of graphs, data, statistics, probability, and geometry. Topic content levels appropriate for grades Pre-K through 8 are presented along with some methods and manipulatives to foster understanding of concepts. 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. Demonstrate concrete, pictorial, and abstract models for concepts and operations of decimals, ratio, proportion, percent, integers, rational, and real numbers.
2. Organize, interpret, and analyze statistics from many types of graphs.
3. Calculate and apply probability and counting techniques to real-world problems.
4. Recognize and analyze basic geometric shapes including polygons and various transformations.
5. 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 7: Decimals, Ratio, Proportion, and Percent
- 7.1 Decimals
- 7.2 Operations with Decimals
- 7.3 Ratios and Proportions
- 7.4 Percent

Chapter 8: Integers
- 8.1 Addition and Subtraction
- 8.2 Multiplication, Division, and Order

Chapter 9: Rational Numbers, Real Numbers, and Algebra
- 9.1 The Rational Numbers
- 9.2 The Real Numbers
- 9.3 Functions and Their Graphs

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, test requirements for SAU k-6. Pre-Test. Sections 7.1 – 7.2	1/10 & 1/12
2	Sections 7.3 – 7.4	1/17 & 1/19
3	Review & test chapter 7 test. Sections 8.1 – 8.2	1/24 & 1/26
4	Sections 9.1 – 9.3	1/31 & 2/2
5	Section 9.3. Review and test chapters 8 & 9	2/7 & 2/9
6	Monday, 2/14: Winter Break -no class. Wednesday: Section 10.1	2/16
7	Sections 10.2 & 10.3	2/21 & 2/23
8	Review & test chapter 10. Sections 11.1 – 11.2	2/28 & 3/2
9	Sections 11.2 & 11.3. Review chapter 11	3/7 & 3/9
10	Test chapter 11. Sections 12.1 – 12.2	3/14 & 3/16
	SPRING BREAK . . . MARCH 21 - 25	
11	Brief review of sections 12.1 – 12.2. Sections 12.3 – 12.4	3/28 & 3/30
12	Section 12.5. Review and test chapter 12. Section 13.1	4/4 & 4/6
13	Sections 13.2 – 13.3	4/11 & 4/13
14	Section 13.4. Review chapter 13. Begin teaching presentations.	4/18 & 4/20
15	Test chapter 13. Review for final exam. Finish teaching presentations	4/25 & 4/27
16	Final exam	

Important Dates:

February 7 (M)	Four-week risk reports due UA Rich Mountain
February 14 (M)	Winter Break (No classes/offices open)
March 7 (M)	Eight-week (Mid-term) grades due UA Rich Mountain
March 21-25 (M-F)	Spring Break (no classes/office open W)
April 11 (M)	Twelve-week risk reports due
April 29 (F)	Last day of classes
May 2-5 (M-R)	Final exams
May 5 (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. Six tests are scheduled. 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 and homework quizzes, projects, and attendance are 40% of your final grade. Attendance is three points per class period with point(s) deducted for tardiness. Absences due to official school activities do not apply. 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 complete with figures drawn, 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 and straight edge paper, no ink or ruffles please. Write the lesson topic 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 your correct answers as you check them. *You will not receive credit for any problems not meeting the criteria for credit described above.*

Completed note-taking guides, homework, and practice test are to be submitted in the order listed on the cover sheet supplied by the instructor. Points will be deducted for incorrect order. The note taking guide and practice test must be complete for full credit as assignments.

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

Grades are assigned on the basis of 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. Homework portfolios are due just before taking the exam. Late portfolios will be severely penalized. 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, all students are required to wear a proper face covering that completely covers the nose and mouth while on campus and in class. Masks with holes or masks that do not completely cover nose and mouth are not acceptable. Any student that does not have a proper mask will leave class and be referred to the Vice Chancellor for Student Affairs for possible disciplinary action.

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 I			
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