Finite Mathematics (MATH2053)
Spring 2022

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Office Hours: MW 10:50 – 12:20, 2:00 – 4:30
TR 12:20 – 1:50, 4:00-4:30
F 10:00 – 1:00 by appointment

Class Schedule: TR 11:00- 12:15 Spencer 245

Prerequisite/Description:
The student should have completed College Algebra (MTH203), or the equivalent, with a "C" or better. This course is intended for those students who need an introduction to the fundamental concepts of calculus. It is designed for students majoring in business, agriculture, and the social sciences. This class cannot be taken for credit after successful completion of MTH245.

Resources:
Text: Finite Mathematics and its Applications 12TH Edition. Larry J. Goldstein, David I. Schneider, Martha J. Siegel & Steven M. Hair. Copyright @2018 by Pearson Education, Inc. ISBN-13: 978-0-13-443776-7, ISBN-10: 0-13-443776-4

Required Materials:
TI-83 or 84 Calculator, 3-ring notebook, college rule 3-hole paper, graph paper or graph stamp, cardboard folder, mechanical pencils with extra erasers, small pack-colored pencils, straight edge.

Course Description: This course is a collection of topics that are anything but Calculus. It is not intended to satisfy the major requirements for BS/BA in mathematics. The student will demonstrate a basic understanding of application for the following topics: linear functions, systems of equations and matrices, linear programming, financial mathematics, probability, statistics, and game theory.

Program Outcomes: This course is intended for those students who need an introduction to the fundamental concepts of general mathematics topics not including calculus. It is designed for students majoring in business, and other social sciences. The knowledge and critical thinking skills acquired will enable students to analyze problems and to arrive at intelligent conclusions, balancing conceptual understanding with technical skills.

- Use mathematical models to describe data applications to solve problems which they encounter in the workplace.

- Possess technological skills to identify, locate, process organize and present information.

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 concepts, students can better analyze, problem solve, and prepare critical thinking strategies for real world scenarios.

Course Objectives: Upon successful completion of Finite Mathematics, the student should be able to:

1. Perform and solve basic differentiation and mathematical problems using appropriate vocabulary and technology.
2. Use critical thinking to formulate decisions and problem solving based on reasoning and analysis.
3. Appropriately use technology to supplement and enhance conceptual understanding, visualization, and inquiry.
4. Synthesize information from a variety of sources to solve problems and interpret results.
6. Create and interpret statistical diagrams.
7. Demonstrate an understanding of the applications of the various topics covered.

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

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, overhead projector, and TI 84+ Smartview computer program for support of graphing calculator use. 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, in a summer session, you should expect to spend at least three clock hours per day 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 day dedicated to this course. This includes the time spent in class. Please see credit hour calculator attached to end of syllabus.

Topical Course Outline and Proposed Schedule

Week	Lesson	Topic
1		**Chapter 1: Linear Functions:**
	1.3	The Least Square Line
2-3		**Chapter 2: Systems of Linear Equations and Matrices:**
	2.1	Solutions of Linear Systems by the Echelon Method
	2.2	Solutions of Linear Systems by the Gauss-Jordan Method
	2.3	Addition and Subtraction of Matrices
	2.4	Multiplication of Matrices
	2.5	Matrix Inverses
4-5		**Chapter 3: Linear Programming: The Graphical Method**
	3.1	Graphing Linear Inequalities
	3.2	Solving Linear Programming Problems Graphically
	3.3	Applications of Linear Programming
6-7		**Chapter 5: Mathematics of Finance**
	5.1	Simple and Compound Interest
	5.2	Future Value of an Annuity
	5.3	Present Value of an Annuity; Amortization
8-9		**Chapter 7: Sets and Basic Probability**
	7.1	Sets
	7.2	Applications of Venn Diagrams
	7.3	Introduction to Probability
	7.4	Basic Concepts of Probability
	7.5	Conditional Probability; Independent Events
10-11		**Chapter 8: Counting Principles and Advanced Probability**
	8.1	The Multiplication Principle; Permutations
	8.2	Combinations
	8.3	Probability Applications of Counting Principles
	8.4	Binomial Probability
	8.5	Probability Distributions; Expected Value
11-12		**Chapter 9: Statistics**
	9.1	Frequency Distributions; Measures of Central Tendency
	9.2	Measures of Variation
	9.3	The Normal Distribution
13-14		**Chapter 11: Game Theory**
	11.1	Strictly Determined Games
	11.2	Mixed Strategies

15-16		Final Review/Final Exam

Important Dates:

January 10	M	Classes begin.
January 21	F	Last day to drop with a refund
February 14	M	Winter Break (no classes, offices open)
February 28-March 4	M-F	Priority Registration for Summer & Fall
March 7	M	Mid-semester/first 8-week classes final grades due
March 21-25	M-F	Spring holidays begin (no classes, offices open)
April 29	F	Classes end/Last day to drop a class with a W
May 2-5 May 5	M-R R	Final exams Grades due

Course Requirements / Evaluation (Grading):

Course Requirements / Evaluation (Grading):

Tests are 30% of your final grade.
Class Attendance & Participation 10%
Homework Assignments & Quizzes 25%
Research & Presentations 15%
Final Exam 20%

The final exam is comprehensive and will include problems from the chapters we have covered in class.

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

Criteria for Credit: Homework must be neat and complete all steps or an explanation of how to arrive at the correct answer must be given. ***Answers alone are not acceptable***. Write the lesson topic at the top of the first page. Leave at least one blank line between problems. All graphs are to be accurately sketched on graph paper with all parts properly labeled and all work for the problem shown on the same page as the graph. For immediate feedback, you may check your answers for most assigned problems in the back of the book. *You will not receive credit for any problems not meeting the criteria for credit described above.*

Class Procedures/Student Requirements:

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) and Learning Enrichment and Counseling Center (LEAC) in the Johnson Learning Commons. You may access www.tutor.com/uarichmountain nights and weekends when SSS is not available.

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. 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 in the classroom is prohibited. Turn cell phone off or set on vibrate and store it out of sight during class time. Cell phones will be taken up on test days.

Academic Dishonesty: Any suspicion of academic dishonesty will result in no credit for the paper in question.

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: UA Rich Mountain provides transformative education to all learners.

Credit Hour Requirement Calculator for Summer Term				
Course Information				
Department, Course Number	Mathematics MTH			
Course Title	Finite Mathematics			
Credit Hours	3			
Mode of Delivery	Traditional			
Days in Part of Term	18			
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/Day**	**Hours/Term**	**Total Hours**
Lecture/Recitation			45	45
	Pages Asg'd	**Hours/Day**	**Hours/Term**	
Syllabus Items				
Daily Homework Assignments			60	60
Prepare for Chapter Tests			12	12
Prepare for Final exam			4	4
Study Assigned Examples	87			7.9
				0
Total Hours				128.9
Required Hours				112.5
Difference				Ok + 16.4