

**Course Information**

<b>Course Title</b>	Support Course for Mathematics for Business & Social Sciences
<b>Course Prefix, Num. and Title</b>	NCBM 0224
<b>Division</b>	Math & Physical Sciences
<b>Department</b>	Math / College Readiness Math
<b>Course Type</b>	Academic General Education Course (from ACGM, but not WCJC Core)
<b>Course Catalog Description</b>	<p>The application of common algebraic functions, including polynomial, exponential, logarithmic, and rational, to problems in business, economics, and the social sciences are addressed. The applications include mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value.</p> <p>This course is designed to help students accelerate through the developmental math sequence in one semester. It focuses on the college readiness concepts necessary to successfully complete Mathematics for Business &amp; Social Sciences concurrently. This class includes directed review, just-in-time instruction, and emphasis on math specific study skills. This course must be successfully completed with a "C" or better to satisfy TSI requirements.</p>
<b>Pre-Requisites</b>	TSI Placement and Advisor/Instructor Recommendation
<b>Co-Requisites</b>	MATH 1324 Mathematics for Business & Social Sciences

**Semester Credit Hours**

<b>Total Semester Credit Hours (SCH): Lecture Hours:</b>	2:2:0
<b>Lab/Other Hours</b>	
<b>Equated Pay Hours</b>	2
<b>Lab/Other Hours Breakdown: Lab Hours</b>	0
<b>Lab/Other Hours Breakdown: Clinical Hours</b>	0
<b>Lab/Other Hours Breakdown: Practicum Hours</b>	0
<b>Other Hours Breakdown</b>	0

**Approval Signatures**

<b>Title</b>	<b>Signature</b>	<b>Date</b>
<b>Prepared by:</b>		
<b>Department Head:</b>		
<b>Division Chair:</b>		
<b>Dean/VPI:</b>		
<b>Approved by CIR:</b>		

## Additional Course Information

**Topical Outline:** Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, and clinical or other non-lecture instruction).

### Unit 1 – Equations and Graphs

Adding and Subtracting Polynomials

Multiplying Polynomials

Solving Linear Equations

Factoring Trinomials

Simplify Square Roots

Quadratic Formula

The Rectangular Coordinate System

Finding Intercepts

Understanding Slope

Writing Equations of Lines

### Unit 2 – Functions

Domain of Functions

Evaluating Functions

Characteristics of Parabolas

Asymptotes

### Unit 3 – Exponential and Logarithmic Functions; Financial Math

Exponent Rules

Properties of Logarithms

Exponentials and Logarithmic Equations

Fractions, Decimals, and Percents

Simple Interest

Choosing appropriate Finance Formulas

Calculator Hints and Practice

### Unit 4 – Matrices and Linear Programming

Systems of Equations

Multiplying Matrices

Row Operations

Graphing Linear Equations

### Unit 5 – Probability and Measures of Central Tendency

Operations with Fractions

Probability

Mean, Median, Mode

## Course Learning Outcomes:

### Learning Outcomes – Upon successful completion of this course, students will:

1. Apply elementary functions, including linear, quadratic, polynomial, rational, logarithmic, and exponential functions to solving real-world problems.
2. Solve mathematics of finance problems, including the computation of interest, annuities, and amortization of loans.
3. Apply basic matrix operations, including linear programming methods, to solve application problems.
4. Demonstrate fundamental probability techniques and application of those techniques, including expected value, to solve problems.
5. Apply matrix skills and probability analyses to model applications to solve real-world problems

### Methods of Assessment:

Optional Methods of Assessment:

- Hour Exams
- Homework
- Quizzes
- Short Answer
- Discussion Board
- Participation
- Projects

## Required text(s), optional text(s) and/or materials to be supplied by the student:

“Mathematics with Applications” by Lial et al; 12<sup>th</sup> edition; Pearson

Students must have computer access to the WCJC website, their WCJC student email and online accounts. WCJC has open computer labs, with internet access, on all campuses for students to use.

## Suggested Course Maximum:

15

## List any specific or physical requirements beyond a typical classroom required to teach the course.

None

**Course Requirements/Grading System:** Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course.

A. MATH 1324 Grade	25%
B. Other Course Requirements	75%

A = 90-100  
B = 80-89  
C = 70-79  
D = 60-69  
F = 59 or below

## Curriculum Checklist:

- Administrative General Education Course** (from ACGM, but not in WCJC Core) – No additional documents needed.
- Administrative WCJC Core Course.** Attach the Core Curriculum Review Forms
  - Critical Thinking
  - Communication
  - Empirical & Quantitative Skills
  - Teamwork
  - Social Responsibility
  - Personal Responsibility
- WECM Course** -If needed, revise the Program SCANS Matrix and Competencies Checklist