



## Math 1324.021 “Hybrid” Finite Mathematics

### Course Syllabus: Fall 2017

“Northeast Texas Community College exists to provide responsible, exemplary learning opportunities.”

**Dr. Jackie Johnston**  
**Office: H-128C**  
**Phone: 903-434-8305**  
**Email: JJohnston@ntcc.edu**

Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	9:30-12:30	1:30-3:30	9:30-11:00 1:30 -3:00	1:30-3:30	By Appointment	Everyday

*The information contained in this syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.*

#### **Catalog Course Description (include prerequisites):**

Finite Mathematics is a first course in finite mathematics for business majors with emphasis on applications to modern business practices. Topics to be developed include the application of common algebraic functions, including polynomial, exponential, logarithmic, and rational, to problems in business, economics, and the social sciences. The applications include mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; probability, including expected value; and statistics, including normal distribution. Three hours credit.

**Prerequisite:** MATH 0305 or appropriate placement score

#### **Required Textbook(s):**

Lial/Hungerford/Holcomb, Mathematics with Applications in the Management, Natural, and Social Sciences, 11th Ed., 2015

**Publisher:** Pearson, Boston, MA

**ISBN Number:** 9780321931078

Note: The NTCC Bookstore link is at [www.ntcc.edu](http://www.ntcc.edu).

#### **Recommended Reading(s):**

None

#### **Student Learning Outcomes:**

Upon successful completion of this course, students will

**1324.1** Apply elementary functions, including linear, quadratic, polynomial, rational, logarithmic, and exponential functions to solving real-world problems.

**1324.2** Solve mathematics of finance problems, including the computation of interest, annuities, and amortization of loans.

- 1324.3** Apply basic matrix operations, including linear programming methods, to solve application problems.
- 1324.4** Demonstrate fundamental probability techniques and application of those techniques, including expected value, to solve problems.
- 1324.5** Apply statistical analyses including measures of center, measures of variation, and the normal distribution to model applications to solve real-world problems.

### **Core Curriculum Purpose and Objectives:**

Through the core curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world; develop principles of personal and social responsibility for living in a diverse world; and advance intellectual and practical skills that are essential for all learning.

Courses in the foundation area of mathematics focus on quantitative literacy in logic, patterns, and relationships. In addition, these courses involve the understanding of key mathematical concepts and the application of appropriate quantitative tools to everyday experience.

### **College Student Learning Outcomes:**

#### Critical Thinking Skills

- CT.1** Students will demonstrate the ability to 1) analyze complex issues, 2) synthesize information, and 3) evaluate the logic, validity, and relevance of data.

#### Communication Skills

- CS.1** Students will effectively develop, interpret and express ideas through written communication.

#### Empirical and Quantitative Skills

- EQS.1** Students will manipulate numerical data or observable facts by organizing and converting relevant information into mathematical or empirical form
- EQS.2** Students will analyze numerical data or observable facts by processing information with correct calculations, explicit notations, and appropriate technology.
- EQS.3** Students will draw informed conclusions from numerical data or observable facts that are accurate, complete, and relevant to the investigation.

### **SCANS Skills:**

N/A

### **Course Outline:**

- I. Equations, Functions, and Graphs
  - A. Equations of Lines
  - B. Linear Inequalities
  - C. Functions and Graphs

- D. Applications of Linear Functions
- II. More Functions; The Mathematics of Finance
  - A. Quadratic Functions with Applications
  - B. Exponential Functions with Applications
  - C. Logarithmic Functions
  - D. Simple Interest and Discount
  - E. Compound Interest
- III. Systems of Linear Equations
  - A. Systems of Linear Equations with Applications
  - B. Matrix Operations with Applications
  - C. Graphing Linear Inequalities in Two Variables
  - D. Linear Programming: The Graphical Method with Applications
  - E. The Simplex Method: Maximization
- IV. Probability Analyses
  - A. Sets, Venn Diagrams, Experiments, Sample Spaces
  - B. Basic Concepts: Rules for Addition, Complements, Odds
  - C. Conditional Probability, Independence
  - D. Probability Distributions and Expected Value
  - E. Multiplication Principle, Permutations, and Combinations
- V. Statistics
  - A. Binomial Distribution
  - B. Measures of Central Tendency
  - C. Measures of Variation
  - D. Normal Distribution
  - E. Normal Approximation to the Binomial Distribution

**Lectures & Discussion:** This is a hybrid class where students are required to access graded activities on blackboard online delivery of instruction. A typical class will involve general participation by all members in a discussion regarding the mathematical principles and procedures being studied. Some small as well as large group activities will be employed, and students are expected to develop as team members as well as individuals.

**Tests/Exams:** Exam information is located below in the Evaluation/Grading Policy.

**Assignments:** Submission of homework problems will be determined on a section-by-section basis. Assignments are subject to change.

**Evaluation/Grading Policy:** Two major 100 point examinations will be given and each will be worth 25% of the final grade. The average of a series of special assignments, and homework will be worth 25%. A comprehensive final examination will contribute 25% to the final grade.

2 Major Exams	50%
Special Assignments/Homework Grades	25%
<u>Comprehensive Final Exam</u>	<u>25%</u>
TOTAL	100%

Students are expected to attend class on the day of the exam. Make-up exams will not be given unless the student has coordinated with the instructor at least two days prior to the exam. Late work for whatever reason will incur a penalty unless otherwise indicated by the instructor. Any approved makeup will be in conjunction with the final course examination.

### Grading System

"A"	90-100%
"B"	80-89%
"C"	70-79%
"D"	60-69%
"F"	Below 60%

**Other Course Requirements:** A graphing calculator is highly recommended for this course, but not required. Note: The NTCC Bookstore link is at [www.ntcc.edu](http://www.ntcc.edu)

**Student Responsibilities/Expectations:** Cell phone usage in the classroom will be coordinated by the professor. Students will be warned when using a phone inappropriately. A student will be removed from class if any disruption continues.

The college's official means of communication is via your campus email address. I will use your campus email address and Blackboard to communicate with you outside of class. Make sure you keep your campus email cleaned out and below the limit so you can receive important messages.

### **NTCC Academic Honesty Statement:**

"Students are expected to complete course work in an honest manner, using their intellects and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. NTCC upholds the highest standards of academic integrity. This course will follow the NTCC Academic Honesty policy stated in the Student Handbook."

### **Academic Ethics**

The college expects all students to engage in academic pursuits in a manner that is beyond reproach. Students are expected to maintain complete honesty and integrity in their academic pursuit. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. Refer to the student handbook for more information on this subject.

### **ADA Statement:**

It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to request accommodations. An appointment can be made with Shannin Garrett, Academic Advisor/Coordinator of Special Populations located in the College Connection. She can be reached at 903-434-8218. For more information and to obtain a copy of the Request for Accommodations, please refer to the [NTCC website - Special Populations](#).

### **Family Educational Rights And Privacy Act (FERPA):**

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program

of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

**NTCC Campus Carry Policy:**

Please review the [Campus Carry Policy](#) at the provided link.

**Other Course Policies:**

Students are expected to be respectful toward classmates and professor at all times!