



### Math 143 – Finite Mathematics Course Syllabus

**Course description:** Mathematical functions and graphs, linear systems of equations, matrices, linear programming, mathematics of finance, and applications.

**Credit hours:** 3

**Course Prerequisites and Corequisites:** See general course prerequisites.

**Course outline:**

	<u>Approximate time spent</u>
• <b>Functions</b>	30%
○ Linear Functions	
○ Quadratic Functions	
▪ Maxima and Minima	
○ Special Functions	
○ Exponential Functions	
▪ Solutions of exponential equations	
○ Logarithmic Functions	
▪ Solutions of logarithmic equations	
○ Applications (e.g. break-even analysis, supply and demand )	
• <b>Matrices</b>	20%
○ Operations of Matrices	
○ Gauss-Jordan Elimination	
○ Inverse of Square Matrices	
○ Applications ( e.g. systems of equations )	
• <b>Linear Programming</b>	30%
○ Graphical Method	
○ Simplex Method	
▪ Maximization	
▪ Duality and Minimization	
▪ Mixed Constraints ( Optional )	
• <b>Mathematics of Finance</b>	20%
○ Simple Interest	
○ Compound Interest	
○ Annuities	
▪ Ordinary Annuities; Future Value and Present Value	
▪ Annuities Due; Future Value and Present Value	
▪ Deferred Annuities; Present Value	
▪ Loans and Amortization	

**Student Learning Outcomes (SLO):** At the end of MTH 143, a student who has studied and learned the material should be able to:

1. Use linear functions and quadratic functions in business applications. [EEO: 1, 2, 4, 5]
2. Use matrices to solve systems of linear equations. [EEO: 1, 2, 5, 6]
3. Use matrices to solve linear programming problems. [EEO: 1, 2, 3, 6, 7]
4. Use exponential functions and logarithmic functions and to solve equations using these functions. [EEO: 2, 5, 6]
5. Solve simple interest and compound interest problems including annuities. [EEO: 1, 4, 7]

*There are no specific program learning outcomes for this major addressed in this course. It is a general education core curriculum course and/or a service course.*

**Exemplary Educational Objectives (EEO):**

1. To apply arithmetic, algebraic, geometric, higher-order thinking, and statistical methods to modeling and solving real-world situations.
2. To represent and evaluate basic mathematical information verbally, numerically, graphically, and symbolically.
3. To expand mathematical reasoning skills and formal logic to develop convincing mathematical arguments.
4. To use appropriate technology to enhance mathematical thinking and understanding and to solve mathematical problems and judge the reasonableness of the results.
5. To interpret mathematical models such as formulas, graphs, tables and schematics, and draw inferences from them.
6. To recognize the limitations of mathematical and statistical models.
7. To develop the view that mathematics is an evolving discipline, interrelated with human culture, and understand its connections to other disciplines.