

**PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS**

**FINITE MATHEMATICS
MATH 1630**

Class Hours: 3.0

Credit Hours: 3.0

Laboratory Hours: 0.0

Date Revised: Fall 2016

Catalog Course Description

Linear functions and applications, interest, annuities, amortization, systems of linear equations including Gauss-Jordan elimination, and matrix theory. Linear programming using graphical and simplex methods.

Prerequisites

High school algebra I and algebra II and precalculus and ACT math score of at least 22 and an ACT reading score of at least 19 or equivalent math and reading placement scores or MATH 1130 or MATH 1710 or MATH 1720 or MATH 1730

Textbook(s) and Other Reference Materials Basic to the Course

Textbook:

Barnett, Raymond A., Michael R. Ziegler, and Karl E. Byleen. *College Mathematics for Business, Economics, Life Sciences, and Social Sciences*, Prentice Hall, custom 13th edition, 2015.

References:

Lial, Margaret L., Raymond N. Greenwell, and Nathan P. Ritchey. *Finite Mathematics and Calculus with Applications*, 9th edition, Pearson Education, Inc., 2011.

Personal Equipment:

A non-symbolic graphing calculator is required. The TI-83, TI-83+, TI-84, or TI-84+ is highly recommended.

Week/Unit/Topic Basis

Week	Topic
1.	Simple Interest. Review of Exponential Functions. Compound and Continuous Compound Interest.
2.	Future Value of an Annuity; Sinking Funds. Present Value of an Annuity.
3.	Amortization. Review. Test 1
4.	Review Linear Equations. Review: Systems of Linear Equations in Two Variables.
5.	Systems of Linear Equations and Augmented Matrices. Gauss-Jordan Elimination.
6.	Gauss-Jordan Elimination. Matrices: Basic Operations.
7.	Inverse of a Square Matrix. Matrix Equations and Systems of Linear Equations.

8. Matrix Equations and Systems of Linear Equations. Review. Test 2.
9. Linear Inequalities in Two Variables. Systems of Linear Equalities in Two Variables.
10. Linear Programming in Two Dimensions: A Geometric Approach. Review. Test 3.
11. The Table Method: An Introduction to the Simplex Method. Review of the Gauss-Jordan Elimination.
12. The Simplex Method: Maximization with Problem Constraints of the Form \leq . The Dual; Minimization with Problem Constraints of the form \geq .
13. The Dual; Minimization with Problem Constraints of the form \geq . Maximization and Minimization with Mixed Problem Constraints.
14. Review. Test 4. Review for Final Exam.
15. Comprehensive Final Exam.

Course Goals*

The course will:

- A. Build on students' ability to demonstrate mastery of the algebraic and linear programming skills necessary for success in the technologies. VI. 1,2,3,4,5,6
- B. Guide students toward translating verbal situations into algebraic equations. VI. 3,4
- C. Enhanced students' ability to construct and discuss mathematical models. VI. 2,4,6
- D. Introduce the Simplex method to solve maximization or minimization problems. VI. 1,4,5,6
- E. Enhance effective use of mathematics to solve business problems and related business applications. VI. 3,4,5,6

*Roman numerals after course goals reference the General Education Goals of the Mathematics program.

Expected Student Learning Outcomes*

The student will:

1. Graph systems of linear inequalities. A
2. Algebraically solve systems of equations. A
3. Solve linear programming problems graphically. A, B, C
4. Apply basic matrix operations and discover their relationships to systems of equations. E
5. Apply the Gauss-Jordan method to solve systems of linear equations. D
6. Solve and apply the Simplex Method to linear programming problems. A, B, D, E
7. Calculate simple and compound interest. A, E
8. Determine future amount and the present value of an annuity. A, E

*Letters after performance expectations reference the course goals listed above.

Evaluation

- A. Testing Procedures: 100% of grade or instructor discretion if lab work and/or section projects are utilized.
Students are evaluated primarily on the basis of tests, quizzes, homework, labs, other projects possibly assigned by the instructor and the comprehensive final exam. A minimum of three major tests and the comprehensive is recommended.
- B. Laboratory Expectations: 0% of grade or instructor discretion.
Instructor discretion on case studies, lab and/or section projects.
- C. Field Work: None.
- D. Other Evaluation Methods: None.
- E. Grading Scale:

Grading Scale	Grade
93 – 100	A
88 – 92	B+
83 – 87	B
78 – 82	C+
70 – 77	C
60 – 69	D
Below 60	F

Policies

- A. Attendance Policy:
Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Academic Affairs, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Academic Affairs.
- B. Academic Dishonesty:
Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:
- Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
 - Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
 - Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one's own work.
 - Taking an exam for another student.

- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
- Any of the above occurring within the Web or distance learning environment.

Please see the Mississippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

C. Accommodations for disabilities:

Students that need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Disability Services (DS) in order to receive accommodations in this course. [Disability Services](#) (<http://www.pstcc.edu/sswd/>) may be contacted via [email](#) or by visiting Alexander 130.

D. Other Policies:

Make-up work: Instructor discretion about make-up tests and/or assignments.

Cell phones: Cell phones are to be either turned off or put in vibration mode while in class. Instructor discretion as to penalty.