PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE  
MASTER SYLLABUS  

FINITE MATHEMATICS  
MATH 1630 (formerly MTH 1610)  

Class Hours: 3.0  
Credit Hours: 3.0  
Laboratory Hours: 0.0  
Revised: Fall 05  

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. ACT math score of at least 21 is recommended.  

Entry Level Standards:  
Students must be able to read at the college level.  

Prerequisites:  
High school algebra I, algebra II, precalculus and satisfactory placement test scores; or MATH 1130; or MATH 1710; or MATH 1730  

Textbook(s) and Other Course Materials:  
Personal Equipment: A graphing calculator is required. The TI-83 or TI-83 Plus is preferred.  

I. Week/Unit/Topic Basis:  

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Slopes; equations of lines</td>
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<tr>
<td>2</td>
<td>Linear function and applications; regression</td>
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<tr>
<td>3</td>
<td>Test 1; solving linear systems</td>
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<tr>
<td>4</td>
<td>Gauss-Jordan elimination; add/subtract matrices</td>
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<tr>
<td>5</td>
<td>Matrix multiplication; matrix inverses</td>
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<tr>
<td>6</td>
<td>Matrix review; Test 2</td>
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<tr>
<td>7</td>
<td>Graphing linear inequalities; graphical solutions to linear programming and applications</td>
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<tr>
<td>8</td>
<td>Linear programming review, Introduction to Simplex Method</td>
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<tr>
<td>9</td>
<td>Maximization</td>
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<tr>
<td>10</td>
<td>Maximization; minimization; duality</td>
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</tbody>
</table>
11 Simplex Method review; Text 3
12 Simple and compound interest; future value of an annuity, 5.1, 5.2
13 Present value of an annuity; amortization, 5.3
14 Test 4; review for final
15 Final Exam

II. Course Objectives*:

A. Demonstrate mastery of the algebraic and linear programming skills necessary for success in the technologies. VI. 1,2,3,4,5
B. Translate verbal situations into algebraic equations. VI. 3,4
C. Construct and discuss mathematical models. VI. 2,4,6
D. Use the Simplex method to solve maximization or minimization problems. VI. 1,4,5,6
E. Use mathematics to solve business problems and related business applications. VI. 3,4,5,6

*Roman numerals after course objectives reference TBR's general education goals.

III. Instructional Processes*:

Students will:

1. Use graphing calculator and/or computer software to solve finance problems. *Technological Literacy Outcome, Numerical Literacy Outcome, Active Learning Strategy
2. Work collaboratively and/or individually to complete laboratory exercises related to real-world business problems such as revenue, profit, break-even analysis, and supply and demand. *Numerical Literacy Outcome, Communication Outcome, Problem Solving and Decision Making Outcome, Transitional Strategy, Active Learning Strategy
3. Engage in collaborative activities such as modeling projects, presentations, group assignments, and/or other activities involving linear programming. *Numerical Literacy Outcome, Active Learning Strategy

*Strategies and outcomes listed after instructional processes reference TBR's goals for strengthening general education knowledge and skills, connecting course work to experiences beyond the classroom, and encouraging students to take active and responsible roles in the educational process.

IV. Expectations for Student Performance*:

Upon successful completion of this course, the student should be able to:

1. Graph systems of linear inequalities. A
2. Algebraically solve systems of equations. A
3. Solve linear programming problems graphically. A, B, C
4. Use basic matrix operations and discover their relationships to systems of equations. E
5. Use 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 objectives listed above.

V. Evaluation:

A. Testing Procedures:

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 4 major tests is recommended.

B. Laboratory Expectations:

As assigned by instructor

C. Field Work:

As assigned by instructor

D. Other Evaluation Methods:

As assigned by instructor

E. Grading Scale:

<table>
<thead>
<tr>
<th>Score</th>
<th>Grade</th>
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<tbody>
<tr>
<td>93 - 100</td>
<td>A</td>
</tr>
<tr>
<td>88 - 92</td>
<td>B+</td>
</tr>
<tr>
<td>83 - 87</td>
<td>B</td>
</tr>
<tr>
<td>78 - 82</td>
<td>C+</td>
</tr>
<tr>
<td>70 - 77</td>
<td>C</td>
</tr>
<tr>
<td>60 - 69</td>
<td>D</td>
</tr>
<tr>
<td>Below 60</td>
<td>F</td>
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VI. Policies:

A. Attendance Policy:

Pellissippi State Technical Community College expects students to attend all scheduled instructional activities. As a minimum, students in all 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 and Student Affairs, may have requirements that are more stringent.

B. Academic Dishonesty:

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.

In addition to other possible disciplinary sanctions that may be imposed as a result of academic misconduct, the instructor has the authority to assign either (1) an F or zero for the assignment or (2) an F for the course.

C. Accommodations for disabilities:

If you need accommodations because of a disability, if you have emergency medical information to share, or if you need special arrangements in case the building must be evacuated, please
inform the instructor immediately. Please see the instructor privately after class or in his/her office. Students must present a current accommodation plan from a staff member in Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be contacted by going to Goins 127 or 131 or by phone: 694-6751(Voice/TTY) or 539-7153.

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 on vibration mode while in class. Instructor discretion as to penalty.