PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

FINITE MATHEMATICS
MATH 1630

Class Hours: 3.0  Credit Hours: 3.0
Laboratory Hours: 0.0  Date Revised: Fall 2007

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 1710.

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

Textbook:

Recommended Reference:

Personal Equipment:
A graphing calculator is required. The TI-83, TI-83 Plus, TI-84, or TI-84 Plus is highly recommended.

I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Review of Real Numbers, Polynomials, Factoring, Rational Expressions, Exponents and Radicals, Linear and Quadratic Equations</td>
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<tr>
<td>2</td>
<td>Linear Function and Applications; Regression</td>
</tr>
<tr>
<td>3</td>
<td>Applications with Polynomial and Rational Functions, Review of Exponential and Logarithmic Functions</td>
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<tr>
<td>4</td>
<td>Test # 1, Simple and Compound Interest Formulas</td>
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<tr>
<td>5</td>
<td>Annuities, Sinking Funds and Amortization</td>
</tr>
<tr>
<td>6</td>
<td>Mathematics of Finance Review, Test # 2</td>
</tr>
<tr>
<td>7</td>
<td>Solving systems of Linear Equations</td>
</tr>
<tr>
<td>8</td>
<td>The Gauss-Jordan Method and Basic Matrix Operations</td>
</tr>
<tr>
<td>9</td>
<td>Matrix Products and Inverses, Applications of Matrices</td>
</tr>
</tbody>
</table>
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 goals of the TBR program.

III. Instructional Processes*:

Students will:

1. Use graphing calculator and/or computer software to solve finance problems. Technological Literacy Outcome, Mathematics 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. Mathematics Outcome, Communication 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. Mathematics 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 four major tests is recommended.

B. Other Evaluation Methods:

As assigned by instructor

C. Grading Scale:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
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</thead>
<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:

Individual instructors must distribute their policies on academic dishonesty and calculator use during the first week of classes. 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 a 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.