PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

INTERMEDIATE ALGEBRA
DSPM 0850 (formerly DSM 0840)

Class Hours: 3.0
Credit Hours: 3.0
Laboratory Hours: 0.0
Date Revised: Spring 03

Catalog Course Description:
This course includes the study of quadratics and rational functions and their graphs, polynomial expressions, quadratic equations, rational expressions and equations, and related applications. The T1-83 or T1-83 Plus calculator is required and used throughout the course.

Entry Level Standards:
Satisfactory completion of DSPR 0700 or equivalent placement test score

Prerequisites:
DSPM 0800 or equivalent math placement score

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

T1-83 or T1-83 Plus graphics calculator. A symbolic manipulator such as the T1-89 or T1-92 is not permitted.

I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction to polynomials, 9.1; polynomial functions and their graphs, 9.2.</td>
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<tr>
<td>2</td>
<td>Quadratic functions and their graphs, 9.3</td>
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<td>3</td>
<td>Review; Test 1 Rules for exponents, 10.1</td>
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<td>4</td>
<td>Polynomial operations, 10.2; polynomial multiplication, 10.3.</td>
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<td>5</td>
<td>Review, Test 2</td>
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<td>6</td>
<td>Common factors and factoring by grouping, 10.4; factoring trinomials, 10.5</td>
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<tr>
<td>7</td>
<td>General strategies for factoring, 10.6</td>
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<tr>
<td>8</td>
<td>Review; Test 3; solving equations numerically and graphically, 11.1</td>
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<tr>
<td>9</td>
<td>Solving equations algebraically by factoring, 11.2; solving quadratic equations by</td>
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using square root, 11.3

10 Solving quadratic equations by completing the square, 11.4; solving quadratic equations by quadratic formula, 11.5

11 More real-world models, 11.6; review; Test 4

12 Rational expressions and functions, 12.1; multiplication and division of rational expressions, 12.2

13 Addition and subtraction of rational expressions, 12.3; solving rational equations in one variable numerically and graphically, 12.4; solving rational equations with one variable algebraically, 12.5

14 More real-world models, 12.6; review; Test 5

15 Review and Final Exam

16 Final Exam Retesting

II. Course Objectives*:

DSPM 0850 is a mathematics course in the TBR mandated Developmental Studies program. The program is designed to provide students with skills which support their success in college-level curricula and enable them to achieve their educational goals. Students who complete the developmental studies program will experience about the same or better success in college-level classes as students who did not need to enroll in developmental courses.

A. Use function notation: evaluate, determine the domain, and graph a function. VI.3, 5

B. Solve quadratic equations and inequalities algebraically, numerically, or graphically. V1.4,5

C. Solve equations with rational expressions algebraically, numerically, or graphically. VI.4, 5

D. Model work problems algebraically. V1.2, 5

E. Interpret graphical information. V1.1

F. Simplify and evaluate algebraic expressions and formulas. V1.5

*Roman numerals after course objectives reference goals of the university parallel program.

III. Instructional Processes*:

Students will:

1. Use graphing calculators and/or computer software to graph functions, solve polynomial and rational equations. Technological Literacy Outcome

2. Engage in collaborative activities, e.g., modeling projects, teamwork, presentations, and/or other activities involving linear, quadratic, and/or rational functions. Problem Solving and Decision Making Outcome, Numerical Literacy Outcome, Transitional Strategy, Active Learning Strategy

3. Use multiple approaches—physical, numerical, graphical, symbolic, and verbal—to
solve polynomial and rational equations. *Numerical Literacy Outcome*

4. Participate in interactive discovery exercises that lead to the development of mathematical relationships. *Active Learning Strategy*

*Strategies and outcomes listed after instructional processes reference Pellissippi State’s goals for strengthening general education knowledge and skills, connecting coursework 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. Rewrite a polynomial as a product of factors or state that the polynomial “cannot be factored”. F
2. Rewrite a rational expression in simplest form and determine the domain. F, A
3. Perform indicated operations on expressions with algebraic fractions. F
4. Find an acceptable solution set for equations or word problems with algebraic fractions. C
5. Find an acceptable solution set for equations or word problems with quadratics. C
6. Calculate the distance between two points using the distance formula. F
7. Evaluate, determine the domain, and graph a linear, rational, or quadratic function. A
8. Model and solve word problems with quadratic or rational equations. D, B

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

**V. Evaluation:**

A. Testing Procedures:

Students have a maximum of two attempts on each chapter test and the final exam. If a student retests a chapter test, their grade for the test will be determined as follows:

a) If one of the scores is 80 or above, the student will receive the average or 80, whichever is higher.

b) If both scores are less than 80, the student receives the highest grade.

The student must score at least 70 on the final exam to pass the course. If the student does not make at least 70 on the first attempt of the final exam given in class, the student must retest during the final exam period. If the student does not make the required grade of at least 70 on one of the two attempts, the student fails the course. If the student takes the final exam twice and makes at least 70 on one attempt, the grade will be the average of the two grades or 70, whichever is higher.

B. Laboratory Expectations:

N/A

C. Field Work:

N/A

D. Other Evaluation Methods:
Evaluation will be based on class participation, homework, and projects as outlined on the syllabus supplement distributed by the instructor.

E. Grading Scale:

Unless otherwise stated on the syllabus supplement, the course grade will be the rounded average of the individual chapter exams and the final exam. To pass the course, the student must achieve both of the following:

1. At least 70% proficiency on the final exam
2. A course average of 78% or better

A = 94-100
B = 87-93
C = 78-86
F = below 78

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 the scheduled class and laboratory meetings in order to receive credit for the course. Students who miss more than the equivalent of one week of class are not eligible for an “I” or “E” grade and are in jeopardy of failing the course.

B. Academic Dishonesty:

Academic dishonesty in any form is prohibited and will be dealt with severely. Penalties range from an F or a zero for the specific project or examination to automatic failure for the course for all students involved. Individual instructors must distribute their policy on academic dishonesty during the first week of class.

C. Withdrawal:

Students placed and enrolled in a DSP course are not permitted to withdraw except for serious documented circumstances. Students wishing to withdraw should discuss this matter first with their mathematics instructor and then must confer with a student development counselor. The counselor will notify the student of the decision to allow him/her to withdraw.