PELLEISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

ELEMENTARY ALGEBRA
DSPM 0800 (formerly DSM 0830)

Class Hours: 3.0          Credit Hours: 3.0
Laboratory Hours: 0.0     Revised: Fall 04

NOTE: This course is designed for transfer credit.

Catalog Course Description:

This course includes the study of real numbers, algebraic expressions, functions, linear equations and inequalities, graphing, systems of linear equations and inequalities, and related applications. The TI-83 or TI-83 Plus calculator is required and used throughout the course.

Entry Level Standards:

Satisfactory completion of DSPR 0700 or equivalent test score

Prerequisites:

DSPM 0700 or equivalent math placement score

Textbook(s) and Other Course Materials:

Thomasson/Pesut, *Experiencing Introductory and Intermediate Algebra*, 2nd ed., Prentice Hall Publishing Company, 1999. TI-83 or the TI-83 Plus graphics calculator. A symbolic manipulator such as the TI-89 or TI-92 is not permitted.

I. Week/Unit/Topic Basis:

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<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Exponents and roots, 1.4; scientific notation, 1.5; order of operations, 1.6; variables and algebraic expressions, 2.1</td>
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<tr>
<td>2</td>
<td>Simplifying algebraic expressions, 2.2; equations, 2.3; formulas and geometry, 2.4; review</td>
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<td>3</td>
<td>Test 1; table of values, ordered pairs, and relations, 3.1; rectangular coordinate system and graphing, 3.2</td>
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<td>4</td>
<td>Functions and function notation, 3.3; review; test 2</td>
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<td>5</td>
<td>Solving linear equations algebraically, 4.2, 4.3; solving linear equations numerically and graphically, 4.1; solving equations for a variable, 4.4; real world models, 4.5</td>
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<tr>
<td>6</td>
<td>Solving linear absolute value equations, 4.6; review; test 3</td>
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<tr>
<td>7</td>
<td>Graphing using ordered pairs and the intercept method, 5.1; graphing using the slope-</td>
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intercept method, 5.2
8 Coinciding, parallel, and perpendicular lines, 5.3; writing linear equations from given
data, 5.4
9 Review; test 4; solving systems of linear equations graphically, 6.1
10 Solving systems of linear equations with substitution, 6.2; solving systems of linear
equations using elimination, 6.3; real world models, 6.4
11 More real world models, 6.4; review; test 5
12 Introduction to linear inequalities, 7.1; linear inequalities in one variable, 7.2; linear
inequalities in two variables, 7.3
13 Systems of linear inequalities in two variables, 7.4; review; test 6
14 Review and final exam
15 Final Exam Period

II. Course Objectives*:

A. Solve first order algebraic equations, inequalities, and systems. VI.2, 4, 5
B. Evaluate expressions, formulas and functions. VI.5
C. Model word problems numerically, graphically, or algebraically. VI.2, 3, 5
D. Use formulas and language of plane and coordinate geometry. VI.3
E. Interpret graphical information. VI.1, 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 simplify algebraic expressions and
solve linear equations and inequalities. Mathematics Outcome, Technological Literacy
Outcome
2. Engage in collaborative activities such as modeling projects, presentations, group
assignments, and/or other activities involving linear equations. Mathematics Outcome,
Transitional Strategy, Active Learning Strategy
3. Use multiple approaches – physical, numerical, graphical, symbolic, and verbal to solve
linear equations and inequalities. Mathematics Outcome

*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. Perform indicated operations on arithmetic expressions involving real numbers by using the correct order of operations. A

2. Simplify single- and multi-variable expressions with real number coefficients using the correct order of operations and the laws of commutativity, associativity, and distribution. A

3. Evaluate single- and multi-variable expressions and functions when given value(s) for the variable(s). B

4. Solve linear equations numerically, graphically, and algebraically. A

5. Solve linear inequalities and represent the solution on a graph and with interval notation. A

6. Simplify expressions involving integer exponents. B

7. Analyze graphs of functions. E

8. Find several solutions of first-order two-variable linear equations and inequalities and graph solutions on the Cartesian coordinate plane. D

9. Model and solve word problems with a single unknown and explain the solution in narrative form. C

10. Write the equation of a line given the graph of the line. D,E

11. Write the equation of a line given the slope of and a point on the line. D

12. Write the equation of a line given two points on the line. D

13. Identify slope, x- and y-intercepts given the equation of the line. D

14. Identify relationships, (parallel, perpendicular, coinciding) between lines by examining both the graphs and equations of the lines. D,E

15. Graph systems of equations by using graphing, substitution, and elimination techniques. A,D,E

16. Solve systems of equations using graphing, substitution, and elimination techniques. A,D,E

17. Model word problems containing two unknowns, solve the resulting system and explain the solution in narrative form. C

18. Interpret and solve problems involving the concepts of area and perimeter, volume, surface area, cost, revenue, profit, and interest. C,D

19. Interpret and solve problems involving the properties of complementary and supplementary angles. C,D

*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 an 80, whichever is higher. b)
If both scores are less than 80, the student receives the higher 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 their 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. 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 accommodation 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. Privately after class or in the instructor's office.

To request accommodations students must register with Services for Students with Disabilities: Goins 127 or 131, Phone: (865) 539-7153 or (865) 694-6751 Voice/TDD.

D. Other Policies:

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.