

PELLISSIPPI 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

**Date Revised: Spring
03**

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 Reference Materials Basic to the Course:

Thomasson/Pesut, *Experiencing Algebra*, 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:

Week	Topic
1	Scientific notation, 2.2, order of operations, 2.5; variables and algebraic expressions, 3.1
2	Algebraic addition, subtraction, multiplication and division, 3.2/3.3; equations, 3.4
3	Formulas and geometry, 3.5; more formulas, 3.6; table of values, ordered pairs, and relations, 4.1
4	Rectangular coordinate system and graphing, 4.2; functions and function notation, 4.3; review, Test 1
5	Solving linear equations numerically and graphically, 5.1; solving linear equations using addition and multiplication, 5.2
6	Solving equations using a combination of properties, 5.3; solving equations for a variable, 5.4

7	Real world models of linear equations, 5.5; solving linear absolute value equations 5.6, Review
8	Test 2; graphing using ordered pairs and the intercept method, 6.1, 6.2
9	Graphing using the slope-intercept method, 6.3; coinciding, parallel, and perpendicular lines, 6.4; writing linear equations from given data, 6.5
10	Review; Test 3; solving systems of linear equations graphically, 7.1
11	Solving systems of linear equations with substitution, 7.2; solving systems of linear equations using elimination, 7.3; real world problems, 7.4
12	Review; Test 4; introduction to linear inequalities, 8.1; linear inequalities in one variable, 8.2; linear inequalities in two variables, 8.3
13	Systems of linear equations in two variables, 8.4; review; Test 5
14	Review and Final Exam
15	Final Exam

II. Course Objectives*:

DSPM 0800 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. Solve first order algebraic equations, inequalities, and systems. VI.4,5
- B. Evaluate expressions, formulas and functions. VI.5
- C. Model word problems numerically, graphically, or algebraically. VI.2,5
- D. Use formulas and language of plane and coordinate geometry. VI.3
- E. Interpret graphical information. VI.1

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

III. Instructional Processes*:

Students will:

1. Use graphing calculator and/or computer software to simplify algebraic expressions and solve linear equations and inequalities. *Technological Literacy Outcome*
2. Engage in collaborative activities such as modeling projects, presentations, group assignments, and/or other activities involving linear equations. *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 linear equations and inequalities. *Numerical Literacy Outcome*

*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. 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 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 a 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 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:

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.

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.