BASIC MATHEMATICS
DSPM 0700 (formerly RSM 0730)

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 integers, fractions, decimals, percents, ratio, proportions, measurements, equations and related applications. Calculator use is integrated throughout the course.

Entry Level Standards:

None

Prerequisites:

None

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

Calculator with fraction capabilities. A symbolic manipulator such as the TI-89 or TI-92 is not permitted.

I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Standard notation, 1.1; addition, 1.2; subtraction, 1.3; rounding and estimating, 1.4; multiplication, 1.5; division, 1.6; solving equations, 1.7; applications, 1.8; exponential notation order of operation, 1.9; integer number line, 2.1; integer additions, 2.2</td>
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<tr>
<td>2</td>
<td>Subtraction, 2.3; multiplication, 2.4; division, 2.5; introduction to algebra and expressions, 2.6</td>
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<td>3</td>
<td>Like terms and perimeter, 2.7; solving equations, 2.8; review</td>
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<td>4</td>
<td>Test 1; factorizations, 3.2; multiplications, 3.4; simplifying, 3.5, simplifying and area, 3.6</td>
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<td>5</td>
<td>Reciprocals, 3.7; division, 3.7; solving equations, 3.8; least common multiples, 4.1; addition, 4.2; subtraction, 4.3</td>
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<tr>
<td>6</td>
<td>Solving equations, 4.4; mixed numerals, 4.5; addition and subtraction using mixed numerals, 4.6</td>
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<td>7</td>
<td>Multiplication and division using mixed numerals, 4.7; review; Test 2</td>
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</table>
Decimal notation, 5.1; addition and subtraction, 5.2; multiplication, 5.3; division, 5.4; converting fractional notation to decimal notation, 5.5; solving equations, 5.7; solving problems, 5.8

Review; Test 3; tables and pictographs, 6.1; bar graphs and line graphs, 6.2

Averages, medians, and modes, 6.5; probability 6.6; introduction, 7.1; rates, 7.2; proportion, 7.3, 7.4

Geometric applications, 7.5; review; Test 4

Introduction, 8.1; solving percent problems, 8.2, 8.3; applications of percents, 8.4; consumer applications, 8.5, 8.6

Linear measurement, 9.1; capacity, 9.6; temperature measurement, 9.7; perimeter and area, 9.2; review

Test 5; Review; Calculator Final Exam

Review; Non-Calculator Final Exam

Final Exam Retesting

II. Course Objectives*:

DSPM 0700 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 enroll in developmental courses.

A. Demonstrate an understanding of number systems. VI.3
B. Perform operations with whole numbers, fractions, decimals, and integers. VI.3
C. Solve problems using equations and graphs. VI.1-5
D. Solve ratio, proportions, and percentage problems. VI.2,3,4
E. Solve basic geometry problems involving perimeter, area, and linear measures. VI.2,3,4
F. Solve basic probability and statistics problems. VI.2,3,4

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

III. Instructional Processes*:

Students will:

1. Use calculator with fraction capability. Technological Literacy Outcome
2. Actively engage in a statistical modeling project that requires real life data. Transitional Strategy, Numerical Literacy Outcome, Active Learning Strategy, Personal Development Outcome
3. Collaboratively solve authentic real-life decimal and percent problems.  Numerical Literacy Outcome, 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. Determine the equivalent numeral for a given word name for a number.  A
2. Determine the nearest multiple of ten, hundred, thousand, or ten thousand of a given whole number with fewer than seven digits.  A
3. Identify the digit in a given place of a whole number or a decimal number.  A
4. Add two or more integers with regrouping.  B
5. Add two or more decimal numbers with regrouping.  B
6. Subtract two integers with regrouping.  B
7. Subtract two decimal numbers with regrouping.  B
8. Multiply integers with regrouping.  B
9. Multiply two decimal numbers, each having no more than three decimal places.  B
10. Divide integers, for which the answer may have a remainder.  B
11. Divide a decimal number by a whole number or decimal number.  B
12. Add three fractions, including mixed numbers, with unlike denominators, and express the answer in simplest form.  B
13. Subtract two fractions with unlike denominators, one of which may be a mixed number, and express the answer in simplest form.  B
14. Multiply two fractions, including mixed numbers, and express the answer in simplest form.  B
15. Divide two fractions, including mixed numbers, and express the answer in simplest form.  B
16. Determine other equivalent forms of a simple fraction, a decimal number, or a percent.  D
17. Solve a problem involving percentages.  D
18. Determine the perimeter (or circumference) and the area of polygons and circles.  E
19. Solve a word problem by identifying a variable, writing an equation, and solving a two-step equation.  C
20. Determine an equivalent measure within the same system for customary or metric units of measurement of (1) length, (2) weight (customary) or mass (metric), or (3) volume.  E
21. Find an appropriate solution to a two-step equation. C
22. Solve problems related to a given graph. C
23. Solve problems using integers, decimals, and fractions. A
24. Solve a problem involving probability and statistics. F

*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:

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 an 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 all him/her to withdraw.