PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

BASIC MATHEMATICS
DSPM 0700

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

Catalog Course Description:

This course includes the study of integers, fractions, decimals, percents, ratios, proportions, measurements, equations and related applications. The TI-83 or TI-83 Plus calculator is required and used throughout the course.

Entry Level Standards:

Student should be proficient with basic operations of whole numbers. It is recommended that students without these basic skills develop the necessary proficiency through the college’s Adult Basic Education Program or other means, prior to enrolling in DSPM 0700.

Prerequisites:

None

Textbook(s) and Other Course Materials:


TI-83 or TI-83 Plus graphics calculator. A symbolic manipulator such as the TI-89 or TI-92 is not permitted. A copy of the *Student Solution Manual* is recommended.

I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tips for Success in Mathematics, 1.1; exponential notation and order of operations, 1.8; Variables and algebraic expressions, 1.9; Basic Math Supplement: Introduction to fractions and mixed numbers, 2.1; Factors and prime factorization, 2.2; Simplest form of fractions, 2.3</td>
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<tr>
<td>2</td>
<td>Basic Math Supplement: Multiplying Fractions, 2.4; Dividing fractions, 2.5; Adding and subtracting like fractions, 3.1; Least common multiple, 3.2; Adding and subtracting unlike fractions, 3.3</td>
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<tr>
<td>3</td>
<td>Basic Math Supplement: Adding and subtracting mixed numbers, 3.4; Order of fractions, exponents, order of operations, 3.5; Review</td>
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<tr>
<td>4</td>
<td>Test 1 and Supplement; Introduction to integers, 2.1; Adding integers, 2.2; Subtracting integers, 2.3; Multiplying and dividing integers, 2.4</td>
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<tr>
<td>5</td>
<td>Order of operations, 2.5; Simplifying algebraic expressions, 3.1; Solving equations using the addition property, 3.2; Solving equations using the multiplication property, 3.3</td>
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<tr>
<td>6</td>
<td>Solving equations using combination of properties, 3.4; Problem solving 3.5; Review;</td>
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Test 2, 3

7 Graphing fractions on a number line, simplifying special fractions and equivalent fractions, 4.1 c, d & e; Factors and simplest form, 4.2; Multiplying and dividing fractions 4.3; Adding and subtracting like fractions, Least common multiple, 4.4; Adding and subtracting unlike fractions, 4.5; Review of order of operations, 4.6 b; Solving equations containing fractions, 4.7; Operations on mixed numbers, 4.8

8 Introduction to decimals, 5.1; Adding and subtracting decimals, 5.2; Multiplying decimals, 5.3; Dividing decimals, 5.4; Order of operations and evaluating expressions, 5.5 b & c; Fractions and decimals, 5.6; Equations containing decimals, 5.7

9 Review; Test 4, 5; Ratios, 6.1; Rates, 6.2; Proportions, 6.3; Solving problems with proportions, 6.4

10 Congruent and similar triangles, 6.5; Percents, decimals and fractions, 7.1; Solving percent problems, 7.2 or 7.3; Applications with percents, 7.4

11 Sales tax, commission and discount, 7.5; Review; Test 6, 7; Pictographs, bar graphs, and line graphs, 8.1; Circle graphs, 8.2

12 Mean, median and mode, 8.5; probability, 8.6; Linear measurement, 9.2; Perimeter, 9.3

13 Area and volume, 9.4; Weight and mass, 9.5; Review; Test 8, 9; Review

14 Review

15 Final Exams (calculator and non-calculator)

II. Course Objectives*:

DSPM 0700 is a mathematics course in the TBR mandated Developmental Studies program. The program is designed to provide students with non-calculator and calculator 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. Perform operations with fractions, decimals, and integers. VI. 2

B. Solve problems using equations and graphs. VI. 2-6

C. Solve ratio, proportions, and percentage problems. VI. 2-5

D. Solve basic geometry problems involving perimeter, area, and linear measures. VI. 2-5

E. Solve basic probability and statistics problems. VI. 2-6

*Roman numerals after course objectives reference TBR's general education goals.

III. Instructional Processes*:

Students will:

1. Use TI-83 or TI-83 Plus calculator. 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 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*

With and without the use of a calculator, upon successful completion of this course, the student should be able to:

1. Identify the digit in a given place of a decimal number. A
2. Add two or more integers with regrouping. B
3. Add two or more decimal numbers with regrouping. B
4. Subtract two integers with regrouping. B
5. Subtract two decimal numbers with regrouping. B
6. Multiply integers with regrouping. B
7. Multiply two decimal numbers, each having no more than three decimal places. B
8. Divide integers, for which the answer may have a remainder. B
9. Divide a decimal number by a whole number or decimal number. B
10. Add three fractions, including mixed numbers, with unlike denominators, and express the answer in simplest form. B
11. Subtract two fractions with unlike denominators, one of which may be a mixed number, and express the answer in simplest form. B
12. Multiply two fractions, including mixed numbers, and express the answer in simplest form. B
13. Divide two fractions, including mixed numbers, and express the answer in simplest form. B
14. Determine other equivalent forms of a simple fraction, a decimal number, or a percent. D
15. Solve a problem involving percentages. D
16. Determine the perimeter (or circumference) and the area of polygons and circles. E
17. Solve a word problem by identifying a variable, writing an equation, and solving a two-step equation. C
18. 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
19. Find an appropriate solution to a two-step equation. C
20. Solve problems related to a given graph. C
21. Solve problems using integers, decimals, and fractions. A
22. 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 both the calculator and pencil final exams to pass the course. If the student does not make at least 70 on the first attempt of the final exams 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. 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.
D. Other Policies:

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.