

PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

BASIC MATHEMATICS
RSM 0730

Class Hours: 3.0

Credit Hours: 3.0

Laboratory Hours: 0.0

Date Revised: Fall 00

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:

Bittinger, Ellenbogen. *Prealgebra*, 3rd ed., Addison Wesley, 2000
Calculator with fraction capabilities. A symbolic manipulator such as the TI-89 or TI-92 is not permitted.

I. Week/Unit/Topic Basis:

Week	Topic
1	Whole Numbers and Integers: 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
2	Integers and Algebraic Expressions: subtraction, 2.3; multiplication, 2.4; division, 2.5; introduction to algebra and expressions, 2.6
3	Integers and Algebraic Expressions: like terms and perimeter, 2.7; solving equations, 2.8; review
4	Multiplication and Division in Fractional Notation; Test 1; factorizations, 3.2; multiplications, 3.4; simplifying, 3.5, simplifying and area, 3.6
5	Addition and subtraction, 4.1, 4.2, 4.3
6	Addition and Subtraction in Fractional Notation: mixed numerals, 4.5; addition

- and subtraction using mixed numerals, 4.6; multiplication and division using mixed numerals, 4.7; Test 2
- 7 Decimal Notation: addition, 5.1; subtraction, 5.2; multiplication, 5.3; division, 5.4
- 8 Decimal Notation: converting fractional notation to decimal notation, 5.6; solving equations, 5.7; solving problems, 5.8; Test 3
- 9 Graphing and Statistics: tables and pictographs, 6.1; bar graphs and line graphs, 6.2; averages, medians, and modes, 6.5
- 10 Ratio and Proportion: introduction, 7.1; rates, 7.2; proportion, 7.3, 7.4; geometric applications, 7.5
- 11 Percent Notation: introduction, 8.1; Test 4
- 12 Percent Notation: solving percent problems, 8.2; applications of percents, 8.3, 8.4; consumer applications, 8.5, 8.6
- 13 Geometry and Measures: linear measurement, 9.1; temperature measurement, 9.7
- 14 Metric Measurements: volume, 9.6; linear and weight, 9.7; Test 5
- 15 Review and final exam
- 16 Final exam retesting

II. Course Objectives*:

RSM 0730 is a mathematics course in the TBR mandated R/D 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 R/D 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. III
- B. Perform operations with whole numbers, fractions, decimals, and integers. III
- C. Solve problems using equations and graphs. I, II, III, IV, V
- D. Solve ratio, proportions, and percentage problems. II, III, IV
- E. Solve basic geometry problems involving perimeter, area, and linear measures. II, III, IV
- F. Use a calculator when appropriate. GE-V.6

*Roman numerals after course objectives reference goals of the Mathematics department.

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. Given a word name for a number less than one billion, the student shall determine the equivalent numeral. A
2. Given a whole number with fewer than seven digits, the student shall determine the answer which represents the nearest multiple of ten, hundred, thousand, or ten thousand. A
3. Given a whole number or a decimal number, the student shall identify the digit that is in a given place. A
4. Given a problem to add either two or more whole numbers or two or more decimal numbers, the student shall solve the problem with regrouping. B
5. Given a problem to subtract either two whole numbers or two decimal numbers, the student shall solve the problem with regrouping. B
6. Given a problem to multiply a three digit number by a two digit number, the student shall solve the problem with regrouping. B
7. Given a problem to multiply two decimal numbers, each having no more than three decimal places, the student shall solve the problem. B
8. Given a problem to divide a four-digit number by a one-digit number, the student shall solve the problem for which the answer may have a remainder. B
9. Given a problem to divide a decimal number by whole number, the student shall solve the problem. B
10. Given a problem to add three fractions with unlike denominators, including mixed numbers, the student shall solve the problem and express the answer in simplest form. B
11. Given a problem to subtract two fractions with unlike denominators, one of which may be a mixed number, the student shall solve the problem and express the answer in simplest form. B
12. Given a problem to multiply or divide two fractions, including mixed numbers, the student shall solve the problem and express the answer in simplest form. B
13. Given a simple fraction, a decimal number, or a percent, the student shall determine either of the other equivalent forms of the number. D
14. Given a problem that involves finding the percent of a number, the student shall solve the problem. D

15. Given the lengths of the adjacent sides of a rectangular figure, the student shall determine the perimeter of the area. E
16. Given a simple one-step word problem, the student shall identify the operation required for the solution of the problem. C
17. Given either customary or metric units of measurement of (1) length, (2) weight (customary) or mass (metric), or (3) volume, the student shall determine an equivalent measure within the same system. E
18. Given an equation, the student shall find an appropriate solution. C
19. Given a graph, the student shall be able to solve problems related to it. C
20. Given a problem involving integers, decimals, and fractions, the student should be able to solve it. A
21. Solve a problem involving probability and statistics. F
22. Given a complex problem, the student shall be able to solve it by using a calculator. G

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

V. Evaluation:

A. Testing Procedures:

Students have a maximum of three attempts to pass each chapter and calculator test. If a student does not achieve at least 80% proficiency within three attempts, he/she fails the course. Two attempts will be allowed to achieve 60% proficiency on the final exam. If a student does not achieve 60% proficiency within two attempts, he/she fails the course.

If a student requires multiple attempts to achieve the required 80% on chapter or calculator tests, the scores on the attempts will be averaged. The student will receive the average of the attempts or 80%, whichever is higher.

If a student requires a second attempt on the final exam to achieve the required 60%, the two attempts will be averaged. The student will receive the average of the two attempts or 60%, 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 average of

the following scores: individual chapter tests, individual calculator tests, comprehensive course final exam and calculator final exam.

A = 94 - 100

B = 87 - 93

C = 77 - 86

F = below 77

To pass the course, the student must:

1. Achieve a course average of "77%" or better
2. Achieve at least 60% proficiency on the final exam
3. Receive an 80% proficiency on each chapter test

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. Other Policies:

According to TBR policies, a student must complete this course within two semesters of enrollment or be suspended from all TBR schools for one semester. A final grade of A, B, C, E, F, I, or W counts as one attempt.

Withdrawal:

Students placed and enrolled in an R/D course are not permitted to withdraw except for serious circumstances. Students wishing to withdraw should discuss this matter first with their mathematics instructor and then must confer with a student development counselor.