PELLISSIPPI STATE TECHNICAL COMMUNITY COLLEGE
MASTER SYLLABUS

SURVEY OF MATHEMATICS
MATH 1010 (formerly MTH 1100)

Class Hours: 3.0 Credit Hours: 3.0
Laboratory Hours: 0.0 Revised: Fall 2004

Catalog Course Description:
Topics include critical thinking skills, problem solving, logic, geometry with some right triangle trigonometry, measurement, consumer math, probability and statistics.

Entry Level Standards:
Students must be able to read at the college level.

Prerequisite:
High school algebra I and algebra II and ACT math score of at least 19; or DSPM 0850 or equivalent math placement score

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

Textbook:

References:

Personal Equipment:
A basic scientific calculator is required. A graphing calculator is recommended.

I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Critical thinking skills and problem solving; 1.1, 1.2, 1.3</td>
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<tr>
<td>2</td>
<td>Set Theory; 2.1, 2.2, 2.3, 2.4</td>
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<tr>
<td>3</td>
<td>Set Theory; 2.1, 2.2, 2.3, 2.4</td>
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<td>4</td>
<td>Logic; 3.4, 3.6; Review, Test 1</td>
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<td>5</td>
<td>Geometry; 9.1 - 9.4</td>
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<td>6</td>
<td>Geometry, Angles, Right Triangles; 9.5, 10.1, 10.4</td>
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<td>7</td>
<td>Right Triangle Trigonometry; 10.5; Review, Test 2</td>
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<tr>
<td>8</td>
<td>Counting Methods for Probability; 11.1-11.4</td>
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<td>9</td>
<td>Probability; 12.1 - 12.3, 12.5</td>
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II. Course Objectives*:

A. Translate verbal and written situations into a problem-solving format. VI.3,4

B. Master the logic necessary to interpret set notation, Venn diagrams, and truth tables. VI.1,1,4

C. Master the critical thinking skills necessary for success in the student’s discipline and life. VI.2,4

D. Master geometric principles necessary for success in the student's discipline. VI2,3

E. Learn enough basic right triangle trigonometry to apply it in current problem solving and future course work. VI.1,2,3,4,5

F. Use mathematics to solve personal everyday financial problems. VI.1,2,3,4,5

G. Use the basic principles of probability. VI.2,4

H. Collect and assemble quantitative data, making wide use of tables and graphs. VI.3,4,5,6

I. Apply principles in statistics to solve real-world problems. VI.2,4,6

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

III. Instructional Processes*:

Students will:

1. Successfully convert sentences into statements in logic and then draw correct conclusions. Transitional Strategies, Active Learning Strategies

2. Use algorithmic processes to solve problems deductively. Use these processes to solve application problems in areas such as business and finance. Mathematics Outcome, Active Learning Strategies

3. Work, either individually or in a group setting, to solve problems from different occupational fields. Solutions must be mathematically correct and be clear and correct in terms of the related occupational field. An example might include using sets and Venn diagrams to use given information about number of employees and employee preferences and dislikes to determine an optimal reorganization of those employees into smaller work groups. Mathematics Outcome, Transitional Strategies, Active Learning Strategies
4. Use a scientific or graphing calculator to solve math of finance problems. Formulas are provided, but the student must determine which formulas to use and when to use them. The student must also be able to use the calculator to get correct results, working with numbers that are often very large and that need to have exponents correctly applied to them. Technological Literacy Outcome, Mathematics Outcome, Active Learning Strategies

*Strategies and outcomes listed after instructional processes reference TBR'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. Use set notation and Venn diagrams in application problems. B
2. Utilize inductive and deductive reasoning. A, C
3. Use truth tables and the laws of logic to draw conclusions. A, B
4. Translate verbal and written situations into problem-solving models. A, C, H, I
5. Solve problems using geometry and right triangle trigonometry. A, D, E
6. Solve measurement problems involving metric system units. H
7. Calculate simple and compound interest, annuities, and loans. F
8. Solve basic probability problems. G
9. Graph a frequency distribution as a bar graph and a line graph. H, I
10. Use normal curves and z-score tables to solve applied problems. A, B, C, H, I
11. Research library texts related to major and write a word problem demonstrating application of math in that major. H

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

V. Evaluation:

A. Testing Procedures:

Students are evaluated primarily on the basis of tests, quizzes, research paper, and a comprehensive final exam. A minimum of 4 chapter tests is recommended.

B. Laboratory Expectations: As assigned by instructor

C. Field Work: As assigned by instructor

D. Other Evaluation Methods:

The assigned library activity can count no more than half of an individual test grade; where appropriate, grammar and syntax will be evaluated in addition to the content. Other as assigned by instructor.

E. Grading Scale:

93 - 100   A
88 - 92    B+
83 - 87    B
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. 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:

Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.

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 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:

Make-up work:
Instructor discretion about make-up tests and/or assignments.

Cell phones:
Cell phones are to be either turned off or put on vibration mode while in class. Instructor discretion as to penalty.