

**PELLISSIPPI STATE COMMUNITY COLLEGE  
MASTER SYLLABUS**

**SURVEY OF MATHEMATICS  
MATH 1010**

**Class Hours: 3.0**

**Credit Hours: 3.0**

**Laboratory Hours: 0.0**

**Date Revised: Fall 2016**

**Catalog Course Description**

Topics include critical thinking skills, problem solving, logic, geometry, measurement, consumer math, probability and statistics.

**Prerequisites**

High school algebra I and algebra II and ACT math score and reading score of at least 19 or equivalent math and reading placement scores.

**Corequisites**

MATH 0010 if required

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

Textbook:

Bennett, Briggs, *Using and Understanding Mathematics: A Quantitative Reasoning Approach*, 6<sup>th</sup> ed., Pearson, 2015.

References:

Smith, Karl J., *The Nature of Mathematics*, 12<sup>th</sup> ed., Cengage Learning, 2012.

Sobecki, Bluman, Mathews, *Math In Our World*, 3<sup>rd</sup> ed., McGraw-Hill, 2015.

Miller, Heeren, Hornsby, *Mathematical Ideas*, 12<sup>th</sup> ed., Pearson, 2012.

Johnson, Mowry, *Mathematics: A Practical Odyssey*, Cengage learning, 7<sup>th</sup> ed., 2012.

Angel, Abbott, Runde, *A Survey of Mathematics with Applications*, 9<sup>th</sup> ed., Addison Wesley, 2012.

Blitzer, Robert, *Thinking Mathematically*, 6<sup>th</sup> ed., Pearson, 2015

Personal Equipment:

TI-83 or TI-84 Graphing Calculator.

**Week/Unit/Topic Basis**

| Week | Topics   |
|------|--|
| 1    | Critical thinking skills, Reasoning, 1A, 1B  |
| 2    | Set concepts, Venn diagrams, Logical arguments, 1C, 1D; Problem solving, Metric system, 2A |
| 3    | Unit analysis 2A, 2B   |

| Week | Topics   |
|------|--|
| 4    | Problem Solving Strategies, 2C; Review and Test 1  |
| 5    | Uses and abuses of percentages, Numbers in perspective, Scientific notation, Deceptive numbers, 3A, 3B, 3E |
| 6    | Basic finances, Compound Interest, Annuities, Loans, Credit Card Interest, 4A, 4B, 4C, 4D                  |
| 7    | Income taxes, 4E; Review and Test 2  |
| 8    | Fundamental ideas in statistics, Tables and graphs, Graphics in the media 5A, 5B, 5C, 5D                   |
| 9    | Correlation and causation, 5E; Measures of center and variation, Normal Distribution, 6A, 6B, 6C           |
| 10   | Statistical Inference 6D; Probability 7A   |
| 11   | Combining Probabilities, Law of large numbers, Assessing risk, Counting and probability, 7B, 7C, 7D, 7E    |
| 12   | Review and Test 3, Functions and Graphs, 9A  |
| 13   | Linear modeling, 9B; Geometry fundamentals, Problem solving with geometry, 10A, 10B                        |
| 14   | Review and Test 4, Review for final  |
| 15   | Final Exam   |

At the discretion of the individual instructor, some changes in the above schedule are possible for this course. Some textbook sections may be added and some sections may be omitted.

### Course Goals\*

The course will:

- A. Guide students to translate verbal and written situations into a problem-solving format. VI. 3, 4
- B. Guide students to master the logic necessary to interpret logic with items such as set notation, Venn diagrams, and truth tables. VI. 1, 3, 4
- C. Guide each student to master the critical thinking skills necessary for success in the student's discipline and life. VI. 2, 4
- D. Guide students to master geometric principles necessary for success in the students' disciplines. VI. 2, 3

- E. Enhance the effective use of mathematics to solve personal everyday financial problems. VI. 1, 2, 3, 4, 5
- F. Enhance the students' knowledge of the basic principles of probability and guide students to solve basic problems in probability and statistics. VI. 2, 4, 6
- G. Enhance the students' ability to collect and assemble quantitative data, making wide use of tables and graphs. VI. 3, 4, 5, 6
- H. Guide students to apply principles in statistics to solve real-world problems. VI. 2, 4, 6
- I. Enhance students' ability to solve modeling applications using algebraic functions. VI. 1, 2, 3, 6

\*Roman numerals after course goals reference the General Education Goals of the Mathematics program.

### **Expected Student Learning Outcomes\***

Students will:

1. Use set notation and Venn diagrams in application problems. B
2. Utilize inductive and deductive reasoning. A, C
3. Draw conclusions as a result of using the laws of logic. A, B
4. Translate verbal and written situations into problem-solving models. A, C, H
5. Solve problems using geometry. A, D
6. Solve measurement problems involving metric system units. A, G
7. Calculate simple and compound interest, annuities, and loans E
8. Solve basic probability problems. F
9. Graph a frequency distribution as a bar graph and a line graph. F, G
10. Use normal curves and z-score tables to solve applied problems. A, C, G, H
11. Solve application problems using linear modeling. A, C, G

\*Capital letters after Expected Student Learning Outcomes reference the course goals listed above.

### **Evaluation**

#### **Testing Procedures: 80% to 90% of grade**

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

**Laboratory Expectations:**

None.

**Field Work:**

None.

**Other Evaluation Methods: 10% to 20% of grade**

Assignment project 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.

**Grading Scale:**

|           |    |
|-----------|----|
| 93-100%   | A  |
| 88-92%    | B+ |
| 83-87%    | B  |
| 78-82%    | C+ |
| 70-77%    | C  |
| 60-69%    | D  |
| Below 60% | F  |

**Policies****Attendance Policy:**

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning 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 Affairs, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Academic Affairs.

**Academic Dishonesty:**

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

- 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.
- Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
- Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one's own work.
- Taking an exam for another student.
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
- Any of the above occurring within the Web or distance learning environment.

Please see the Pellissippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

**Accommodations for disabilities:**

Students that need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Disability Services (DS) in order to receive accommodations in this course. [Disability Services](#) (<http://www.pstcc.edu/sswd/>) may be contacted via [email](#) or by visiting Alexander 130.

**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.