PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS

STATISTICS PRINCIPLES W/LAB
MATH 0530

Class Hours: 1.0  Credit Hours: 2.0
Laboratory Hours: 2.0  Date Revised: Fall 2015

Catalog Course Description:

A corequisite for MATH 1530, Elementary Probability and Statistics, the course consists of mastering prerequisite mathematics and the skills needed for success in the college-level course MATH 1530, and a supervised lab time in a designated academic support area each week to complete assignments covering topics from both MATH 0530 and MATH 1530.

Entry Level Standards:

Students must be able to read and write at the college level.

Prerequisites:

MATH ACT sub-score of 17-18 or COMPASS Algebra score of 27-37. Student may not have attempted LS Mathematics previously.

Corequisites:

MATH 1530

Textbook(s) and Other Course Materials:

TI-83 or TI-84 Graphing Calculator

I. Week/Unit/Topic Basis:

As a co-requisite course, MATH 0530 topics correspond to learning objectives covered in MATH 1530.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>College and course success skills, conversions between rational and decimal representations of numbers, standard and scientific notation, sets of numbers (integer, rational, and real numbers)</td>
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<tr>
<td>2</td>
<td>Graphing, labeling axes, and the coordinate plane</td>
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<tr>
<td>3</td>
<td>Order of operations, symbolic notation used in formulas</td>
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<tr>
<td>4</td>
<td>Operations with rational numbers, multiplication of fractions as probabilities of simple and compound events</td>
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<tr>
<td>5</td>
<td>Addition and rounding of decimal numbers in discrete probability distributions, expressions involving exponents including the mean and standard deviation</td>
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<tr>
<td>6</td>
<td>Writing inequality statements from word problems, area of rectangles, circles, and</td>
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triangles, solving formulas for a specified variable
7 The distributive law to evaluate expressions
8 Interval notation, expressions involving roots
9 Discussion of MATH 1530 Capstone Project criteria
10 Magnitude of decimal numbers
11 Linear relationships
12 Components of linear equations
13 Discussion of MATH 1530 Capstone Project criteria
14 Review for Final Exam
15 Final Exam Period

II. Course Goals*:

The course will:

A. Engage the student in substantial mathematical problem solving. VI. 1, 2, 4
B. Expand student understanding of mathematics through modeling real world situations with the MATH 1530 Capstone Project. VI. 1, 3, 4
C. Foster the ability to read, write, listen to, and speak mathematics. I. 1, 2, 6
D. Use appropriate technology to enhance mathematical thinking and understanding and to judge the reasonableness of results. VI. 2, 5; VII. 1, 4, 5, 6
E. Build the skills to perform arithmetic operations, as well as reason and draw conclusions from numerical information. VI. 1, 2, 6
F. Build the skills to select, use, and translate among mathematical representations to organize information and solve problems using a variety of techniques. VI. 1, 2, 6
G. Increase student tenacity and confidence in the ability to use mathematics. VI. 3, 4

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

III. Expected Student Learning Outcomes*:

Students will:

1. Apply the order of operations to evaluate expressions. E, F
2. Perform operations with rational numbers. E, F
3. Determine other equivalent forms of the number when given a fraction, decimal, or percent. B, D, E, F
4. Identify and calculate with irrational numbers. D, E, F
5. Recognize and apply magnitude and ordering of real numbers. E, F
7. Determine the area of a rectangle, triangle, and circle. A, B, D, E
8. Write and compare numbers in standard and scientific notation. D, E
9. Evaluate algebraic expressions when given values for the variables. A, E
10. Create a table of values from an expression. B, C, D, F
11. Evaluate expressions involving powers and roots. A, D
12. Use the distributive law to write equivalent expressions. E, F
13. Identify and interpret rate of change. A, B, C, G
14. Analyze the graph of a linear function, identifying intercepts and slope. A, B, C, F, G
15. Graph a linear equation in two variables using ordered pairs, and intercepts and slope. B, D, F
16. Write a linear equation in two variables when given information about its graph. A, B, D, G
17. Solve a linear equation in one variable using multiple approaches. D, E, F
18. Solve formulas and literal equations for a specified variable. E, F
19. Articulate the process of finding and interpreting the meaning of solutions. A, B, C, G
20. Use symbols, diagrams, graphs, and words to reason logically and form appropriate implications. A, B, C, D, G
21. Develop plans for solving problems, and implement those plans using logical reasoning and mathematical knowledge to form and justify solutions. A, B, C, D, G

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

IV. Evaluation:

A. Testing Procedures: 60% of grade

There will be four, competency-based assessments. Students must score at least 80% on each assessment in order to pass.

B. Laboratory Expectations: 15% of grade

Students are expected to attend each scheduled weekly class hour. Completion of the
additional, supervised 2 hours lab hours may be done at the students’ convenience, in the
designated academic support centers on each of the campuses. These hours will be tracked via
scanning of the students’ PSCC ID card.

C. Field Work:

N/A

D. Other Evaluation Methods: 25% of grade

In conjunction with the co-requisite course MATH 1530, students will complete a semester-
long “Capstone Project,” involving exploration, representation, and analysis of a large, real
world dataset. Grading rubrics for the Capstone Project will be provided by the instructor. A
minimum grade of 80% on the Capstone Project is required to pass MATH 0530.

E. Grading Scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>94-100%</td>
</tr>
<tr>
<td>B</td>
<td>87-93%</td>
</tr>
<tr>
<td>C</td>
<td>80-86%</td>
</tr>
<tr>
<td>F</td>
<td>Below 80%</td>
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V. Policies:

A. 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.

B. 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.

C. 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 may be contacted by sending email to disabilityservices@pstcc.edu, or by visiting Alexander 130. More information is available at http://www.pstcc.edu/sswd/.