



ILLINOIS VALLEY COMMUNITY COLLEGE

COURSE OUTLINE

DIVISION: Natural Sciences and Business

COURSE: MTH 0108 Statistics Supplement

Date: Spring 2022

Credit Hours: 2

Complete all that apply or mark "None" where appropriate:

Prerequisite(s): None

Enrollment by assessment or other measure? Yes No

If yes, please describe: Appropriate score on Accuplacer.

Corequisite(s): Must be taken concurrently with MTH 1008

Pre- or Corequisite(s): None

Consent of Instructor: Yes No

Delivery Method: **Lecture** **2 Contact Hours** (1 contact = 1 credit hour)
 Seminar **0 Contact Hours** (1 contact = 1 credit hour)
 Lab **0 Contact Hours** (2-3 contact = 1 credit hour)
 Clinical **0 Contact Hours** (3 contact = 1 credit hour)
 Online
 Blended
 Virtual Class Meeting (VCM)

Offered: **Fall** **Spring** **Summer**

CATALOG DESCRIPTION and IAI NUMBER (if applicable):

This course covers pre-requisite skills necessary to be successful in MTH 1008 General Elementary Statistics and is taught concurrently with MTH 1008. The course integrates mathematical content with instruction in the study/critical thinking skills necessary for successful completion of MTH 1008 General Elementary Statistics course work. Emphasis will be placed on work with fractions, decimals, ratios and proportions, percent, signed numbers, equation solving, Cartesian coordinate system, graphing and

writing equations of lines and their applications, interpreting slopes and intercepts, and square roots. Additional topics to be addressed include time management, note-taking, study skills, math anxiety, test preparation, test-taking skills, critical thinking/problem-solving, personal responsibility, self-motivation, and self-management. The grade in this course is not computed in G.P.A. or applicable to any degree or certificate program for graduation.

ACCREDITATION STATEMENTS AND COURSE NOTES:

None

COURSE TOPICS AND CONTENT REQUIREMENTS:

- I. Fractions
 - a. Equivalency
 - b. Computation
 - c. Ordering
 - d. Applications
- II. Decimals
 - a. Rounding
 - b. Computation
 - c. Equivalency to fraction and percent form
 - d. Applications
- III. Ratios & Proportion
 - a. Solve Proportions
- IV. Percent
 - a. Computation
 - b. Applications
- V. Signed Numbers
 - a. Ordering
 - b. Order of operations
- VI. Solving Linear Equations
 - a. Solve equations
 - b. Applications
 - c. Solve formulas
 - d. Translate sentences to equations
- VII. Cartesian Coordinate System
 - a. Graph ordered pairs
 - b. Intercepts
- VIII. Graphing Linear Equations
 - a. Plotting points
 - b. Slope
 - c. Intercepts
 - d. Slope-intercept method
- IX. Writing Equations of Lines
 - a. Using slope and a point
- X. Square Roots
 - a. Approximate square roots

XI. Success Strategies

- a. personal responsibility
- b. self-motivation
- c. self-management
- d. critical thinking and problem-solving
- e. time management
- f. note-taking
- g. study skills
- h. test-taking strategies

INSTRUCTIONAL METHODS:

- Lectures
- Guest speakers
- Small groups/one-on-one discussion
- Class participation and activities

EVALUATION OF STUDENT ACHIEVEMENT:

- Class attendance/participation
- In-class activities
- Homework assignments
- Other

INSTRUCTIONAL MATERIALS:

Textbooks

*There will be no textbook or online supplement required for purchase by the student. Instructors will pull content from existing physical resources as listed in the reference section or use Open Educational Resources. MTH 0108 instructors will also have access to the Statistics e-book and corresponding Statistics assignments in MyStatsLab. This access will be provided by the MTH 1008 instructor whose class section is linked to the Supplemental section.

Resources

- Computer
- Scientific calculator

LEARNING OUTCOMES AND GOALS:

Institutional Learning Outcomes

- 1) Communication – to communicate effectively;
- 2) Inquiry – to apply critical, logical, creative, aesthetic, or quantitative analytical reasoning to formulate a judgement or conclusion;
- 3) Social Consciousness – to understand what it means to be a socially conscious person, locally and globally;
- 4) Responsibility – to recognize how personal choices affect self and society.

Course Outcomes and Competencies

Upon completion of the course, the student will be able to:

1. demonstrate a working knowledge of fractions
 - 1.1. Write equivalent fractions.
 - 1.2. Reduce a fraction to lowest terms.
 - 1.3. Add, subtract, multiply and divide two or more fractions and/or mixed numbers.
 - 1.4. Use the order of operations to evaluate expressions containing fractions.
 - 1.5. Solve real-world problems involving fractions.
2. demonstrate a working knowledge of decimals
 - 2.1. Round a decimal to a given place value.
 - 2.2. Add, subtract, multiply or divide two or more decimal numbers.
 - 2.3. Use the order of operations to evaluate expressions containing decimals.
 - 2.4. Convert between decimal notation and fraction/mixed number notation.
 - 2.5. Solve real-world problems involving decimals.
 - 2.6. Demonstrate a working knowledge of ratios and proportions.
 - 2.7. Write a ratio of quantities in simplest form.
 - 2.8. Determine whether a given proportion is true or false.
 - 2.9. Demonstrate a working knowledge of percent
 - 2.10. Write a percent as a fraction or decimal.
 - 2.11. Solve real-world problems involving percent.
3. demonstrate a working knowledge of signed numbers and perform operations with them.
 - 3.1. Determine the order of signed numbers.
 - 3.2. Use the rules for order of operations to evaluate expressions
 - 3.3. demonstrate a working knowledge of solving basic linear equations.
 - 3.4. Solve equations using the addition property.
 - 3.5. Solve equations using the multiplication property.
 - 3.6. Solve formulas.
 - 3.7. Translate sentences into equations and solve them.
 - 3.8. Solve real-world application problems using equations.
4. demonstrate a working knowledge of the Cartesian coordinate system.
 - 4.1. Graph ordered pairs,
 - 4.2. Graph x- and y-intercepts.
5. demonstrate the skills needed to graph linear equations.
 - 5.1. Graph linear equations by plotting points
 - 5.2. Graph linear equations by the intercept method.
 - 5.3. Interpret the slope and y-intercept of a line.
 - 5.4. Find the slope of a line.
 - 5.5. Graph linear equations by using the slope.
 - 5.6. Graph linear equations in real-world applications.
6. demonstrate the skills needed to write the equation of a line.
 - 6.1. Write the equation of a line given the slope and one point.
7. demonstrate the skills needed to simplify basic square roots
 - 7.1. Approximate square roots using a calculator.
 - 7.2. Use the order of operations to evaluate expressions containing square roots.
 - 7.3. Evaluate complex expressions on the calculator.
8. Investigate strategies to create greater academic and personal success.
 - 8.1. The student will learn ways to take greater personal responsibility.
 - 8.2. The student will learn methods to increase self-motivation.

- 8.3. The student will learn strategies for self-management.
- 8.4. The student will improve critical thinking and problem-solving skills.
- 8.5. The student will learn time management strategies.
- 8.6. The student will investigate different note-taking techniques.
- 8.7. The student will learn ways to improve their study skills.
 - 8.7.1. The student will learn strategies for effectively completing online homework.
 - 8.7.2. The student will learn strategies for reading their math textbook.
 - 8.7.3. The student will learn how to effectively use their online resources.
 - 8.7.4. The student will learn how to effectively use campus resources.
- 8.8. The student will improve their test-taking strategies.
 - 8.8.1. The student will learn strategies for test preparation.
 - 8.8.2. The student will learn strategies to use while taking a test.
 - 8.8.3. The student will learn test analysis strategies following a test.