

**MATH 5 - Concepts in Mathematics for Teachers II****Catalog Description**

Transfer Status: CSU/UC**Prerequisite:** Intermediate Algebra or equivalent**Unit(s):** 4.00**Lecture:** 68.00 Contact hours/136.00 Out of class hours/204.00 Total hours/4.00 Unit(s)**Total:** 68.00 Contact hours/136.00 Out of class hours/204.00 Total hours/4.00 Unit(s)

Course Description: This course develops mathematical topics needed for elementary school teaching with a focus on reasoning, problem solving, and communication. The topics include elementary statistics and probability, two- and three-dimensional geometry, measurement, coordinate geometry, and graphing. Meets requirements for elementary school teacher certification.

Objectives

Upon successful completion of this course, the student should be able to:

1. Organize, summarize, and interpret statistical data.
2. Implement the rules of probability to an experiment.
3. Illustrate the correct use of vocabulary and properties in the study of plane and solid geometry.
4. Solve basic geometry problems using basic algebraic and geometric rules, formulas, and procedures.
5. Use basic concepts of measurement, including standard (metric & English) and non-standard units.
6. Solve problems using coordinate geometry.

Course Content

Topic Titles / Suggested Time Topic	
	<u>Lecture</u>
<u>Topics</u>	<u>Lec Hrs</u>
Statistics	11.00
Probability	11.00
Geometry	11.00
Measurement	11.00
Similarity and Congruence	8.00
Coordinate Geometry	8.00
Problem Solving	8.00
Total Hours: 68.00	

Methods of Instruction

- A. Collaborative Group Work
- B. Discussion
- C. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
- D. Lecture

Methods of Evaluation

- A. Exams/Tests
- B. Quizzes
- C. Class Assignments and Class Response, Daily Homework Assignments, where the student will demonstrate problem-solving skills

Examples of Assignments

Reading Assignments

1. Read the section in the textbook on statistics and be able to graph, analyze, and interpret data.
2. Read the section in the textbook on geometric shapes and be able to recognize and analyze relationships between different geometric shapes.

Writing Assignments

1. Describe in words how pictographs, line graphs, and histograms can be deceptive and give examples of each.
2. Describe in words some properties of polyhedrons that distinguish them from three-dimensional shapes that are not polyhedrons.

Out-of-Class Assignments

1. Review the section on Statistics and solve the problems assigned by the instructor showing all work.
2. Review the section on Geometric Shapes and solve the problems assigned by the instructor showing each step.

Recommended Materials of Instruction

Billstein, R., Libeskind, S., Lott, J. (2020). A Problem Solving Approach to Mathematics for Elementary School Teachers. *Pearson*, 13.

Other Learning Materials

Scientific calculator

Minimum Qualifications

Mathematics (Masters Required)

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