MATH 0017S - CONCEPTS OF MATHEMATICS SUPPORT

Catalog Description

Corequisite: Concurrent enrollment in Math 17
Hours: 36 lecture
Description:Concurrent support for competency and concepts from Euclidean Geometry. Intended for students concurrently enrolled in Math 17. (not degree applicable) (pass/no pass grading)

Course Student Learning Outcomes

- CSLO #1: Develop and implement strategies for approaching unfamiliar mathematical problems.
- CSLO #2: Logically present clear, complete, accurate, and sufficiently detailed solutions to communicate reasoning and demonstrate the method of solving problems.
- CSLO #3: Interpret and construct visual models of mathematical concepts.
- CSLO #4: Use mathematical techniques to translate, model, and solve applied problems.
- CSLO #5: Clearly communicate mathematical information, concepts, and processes to others.

Effective Term

Fall 2022

Course Type

Credit - Nondegree-applicable

Contact Hours

36

Outside of Class Hours

72

Total Student Learning Hours

108

Course Objectives

1. Cite, list, and identify definitions and axioms/postulates about parallel lines; analyze properties of transversals of parallel lines and corresponding angles;
2. Demonstrate the use of construction tools, particularly a compass, ruler, and protractor, to create various geometric figures (parallel lines, angle bisectors, congruent segments, equilateral triangles, perpendicular bisectors, etc);
3. Verify congruency and similarity of two dimensional geometric figures by using congruence of similarity to solve for missing lengths;
4. Calculate the perimeter and area of standard two dimensional figures; identify properties specific to two dimensional geometric figures; and
5. Determine the surface area and volume of standard three-dimensional figures.

General Education Information

- Approved College Associate Degree GE Applicability
- CSU GE Applicability (Recommended-requires CSU approval)
- Cal-GETC Applicability (Recommended - Requires External Approval)
- IGETC Applicability (Recommended-requires CSU/UC approval)

Articulation Information

- Not Transferable

Methods of Evaluation

- Problem Solving Examinations
  - Example: Students will demonstrate the use of each construction tool (compass, protractor, and ruler) in order to construct a rectangle of given size. Pass/Fail Grading.
- Projects
  - Example: Students will build three-dimensional solids satisfying given qualities. Rubric Graded.

Repeatable

No

Methods of Instruction

- Lecture/Discussion
- Distance Learning

Lecture:

1. Following an instructor lecture and presentation on parallel lines and transversals, students will participate in a class discussion of the relationships among the angles formed. (Objective 1)
2. Students will be instructed to use geometric construction tools (compass, protractor, ruler) and instructor will ensure that the students can use them. (Objective 2)

Distance Learning

1. Following an instructor video lecture giving a presentation on parallel lines and transversals, students will participate in a class discussion of the relationships among the angles formed. (Objective 1)
2. Students will be given demonstrations videos on how to use geometric construction tools (compass, protractor, ruler) and instructor will ensure that the students can use them. (Objective 2)

Typical Out of Class Assignments Reading Assignments

1. Research a real life example of symmetry in architecture and describe the type of symmetry exhibited in the finding. 2. Read an article on a historical reference of non-standard measurement.

Writing, Problem Solving or Performance

1. Create a detailed description on how to use at least one of the construction tools (compass, protractor, ruler). 2. Investigate the relationship between the sum of the interior angles for any polygon and the sum of the interior angles of the associated triangles.

Other (Term projects, research papers, portfolios, etc.)

1. Create a dictionary of vocabulary and definitions, axioms, and theorems that are presented in class. 2. Create a portfolio of examples of vocabulary and definitions, axioms, and theorems that are presented in class.

Required Materials

- Elementary Geometry for College Students
  - Author: Alexander/Koeberlein
  - Publisher: Brooks Cole
  - Publication Date: 2020
  - Text Edition: 7th
  - Classic Textbook?: No
  - OER Link:
  - OER:

Other materials and-or supplies required of students that contribute to the cost of the course.