DRFT 2715

Division: Career and Technical Education
Department: Drafting Technology
Course: DRFT 2715
Title: Applied Right Triangle Trigonometry for Drafting
Catalog Description:

This course covers the meaning of angles and various kinds of triangles used in conjunction with advanced surveying and AutoCAD drafting. It includes the use of bearing and vectors as they apply to the application of triangles in solving problems.

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 3; Lecture: 3; Lab: 0
Clock/Hour Requirements: 45
Offered for Non-Credit: No
Prerequisites: DRFT 1715 or DRFT 1007 and DRFT 1008

Corequisites: None

Justification:

This course is approved by the program advisory committee and corresponds to UVSC course DT 1610.

Student Learning Outcomes:

Upon successful completion of the course, students will be able to:

- apply the Pythagorean Theorem
- know and apply the coordinate system and distance formula
- understand applications in solving for special right triangles
- understand angles and the unit circle
- know the terms for trigonometric functions
- understand and apply sine, cosine, and tangent functions
- apply direction and bearing in solving for triangles
- use the calculator in solving inverse trigonometric functions
- apply angles of elevation and depression
- apply the law of sines, cosines, and tangents in solving any triangle
- solve for the area of any triangle
- solve vector problems.

Content:

Course objectives will be achieved by providing students with instructional and hands-on experiences in the following areas:

- the Pythagorean Theorem
- the coordinate system and distance formula
- application of the distance formula
- use of special right triangles
- angles and the unit circle
- definitions of circular trigonometric functions
- use of sine, cosine, and tangent functions
- solving right triangle problems
- solving direction and bearing problems
- solving inverse trigonometric functions
- using angles of elevation and depression
- the law of sines and oblique triangles
- the law of cosines
- the law of tangents
- areas of triangles using sine and cosine functions
- using trigonometric functions to solve vector problems.

General Education Outcomes:

6) Apply computational skills to a variety of contexts.
The field of drafting requires the combination of basic math, geometry, and algebra skills. Students will utilize these skills when producing drawings, cost estimates, and material lists.

Key Performance Indicators:

In class:

- Students will demonstrate mastery of course competencies by completing assignments/projects, tests, and quizzes. Assignments/projects are worth 75%, tests are worth 15%, and quizzes are worth 10% of the final grade.

Following Class:

- The knowledge and skills acquired in this course will be demonstrated in subsequent courses.

Representative Text and/or Supplies:

- *Practical Problems in Mathematics for Drafting and CAD,* current edition, Delmar Publishers.

Optimum Class Size: 12
Maximum Class Size: 20

Signatures:

I hereby submit this course syllabus:

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Craig Conder, ,

I hereby find this course consistent with the goals and resources of the Drafting Technology Department:

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Craig Conder, , , Chair

I hereby find this course consistent with the goals and resources of the Career and Technical Education Division:

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Michael P. Medley, MBA, Assistant Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

_____

Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

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Michelle Olsen, MLS, Campus Librarian (Richfield Campus)