DRFT 1410

Division: Career and Technical Education
Department: Drafting Technology
Course: DRFT 1410
Title: Basic Surveying
Catalog Description:

This course is designed for drafting majors and anyone wishing to learn the fundamentals of surveying. It includes basic surveying instruments, mathematics, measurements and computations, leveling procedures, bearing computations, traverse closures, topography, area computations, and basic property surveying. Students who successfully complete this course will be able to work in the job entry phase of the surveying field.

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 3; Lecture: 2; Lab: 3
Clock/Hour Requirements: 75
Offered for Non-Credit: No
Prerequisites: DRFT 1400, and DRFT 2710 or MATH 1060 or concurrent enrollment

Corequisites: None

Justification:

This course is approved by the advisory program committee and corresponds to UVSC course DT 1400.

Student Learning Outcomes:

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

- care for and maintain surveying equipment
- set up a level and accomplish differential and profile leveling
- set up a transit or theodolite and measure horizontal and vertical angles to an accuracy compatible with the instrument used
- perform basic surveying mathematical computations
- obtain grades with a level and prepare a basic topographic map
- compute the area of property by two different methods.

Content:

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

- surveying instruments and equipment
- measurement and computation
    - measuring horizontal distance

    - measuring vertical distance - differential leveling
    - measuring vertical distance - profile leveling
- math for surveying
- topographical surveys
- topographical mapping
- bearing and azimuth
- measuring angles
- bonding surveying
- traverse closures
- area computations
- property plats.

General Education Outcomes:

2) Write clearly, informatively, and persuasively.
Students are required to complete descriptive term-sheets which provide information about the vocabulary and terminology used in this specific area. The descriptions are reviewed, graded, and returned to students for improvement.

4) Retrieve, evaluate, interpret, and deliver information through a variety of traditional and electronic media.
Students will research information (i.e. styles, layouts, mechanical parts, connectors, fasteners, etc.) through the Internet, written manuals, journals, and other publications. This information is used to complete projects and assignments throughout the program.

5) Apply a cultural and historical awareness to a variety of phenomena.
Students must understand the historical aspects of architectural styles and the methods utilized in the drafting field. This historical perspective is addressed in lecture and students are required to identify styles through exams and projects.

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 class will be demonstrated in subsequent courses and by students' ability to work in the job entry phase of the surveying field.

Representative Text and/or Supplies:

- *Surveying Practice*, current edition, McGraw-Hill Book Company.
- *Mapping and Topographical Drafting*, current edition, South Western Publishing Company.

Optimum Class Size: 12
Maximum Class Size: 20

Signatures:

I hereby submit this course syllabus:

Craig Conder, ,

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

Craig Conder, , , Chair

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

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)

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)