CONS 50 Course Outline as of Spring 2009

CATALOG INFORMATION

Dept and Nbr: CONS 50 Title: CONSTRUCTION SURVEY
Full Title: Construction Surveying and Measurements
Last Reviewed: 1/25/2016

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	2.00	Lecture Scheduled	1.00	17.5	Lecture Scheduled	17.50
Minimum	2.00	Lab Scheduled	3.00	17.5	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	4.00		Contact Total	70.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 35.00 Total Student Learning Hours: 105.00

Title 5 Category:	AA Degree Applicable
Grading:	Grade Only
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

Catalog Description:
Construction surveying and documentation including office and field measurements of distances, elevations, angles and material quantities related to construction layout of building and engineering works.

Prerequisites/Corequisites:
AP TECH 90A or MATH 155 or higher, AND APTECH 45 (or APTECH 55).

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Construction surveying and documentation including office and field measurements of distances, elevations, angles and material quantities related to construction layout of building and engineering works. (Grade Only)
Prerequisites/Corequisites: AP TECH 90A or MATH 155 or higher, AND APTECH 45 (or APTECH 55).
Recommended:

Limits on Enrollment:
Transfer Credit: CSU;
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**			Effective:	Inactive:
CSU GE:	**Transfer Area**			Effective:	Inactive:
IGETC:	**Transfer Area**			Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Spring 2009	Inactive:	Fall 2021
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Outcomes and Objectives:
Upon the completion of this course, the student will:
1. Define and illustrate type of construction measurements and their units as applied to construction surveying.
2. Demonstrate the appropriate use and care of instruments used in construction surveying.
3. Determine, calculate and demonstrate the appropriate method to be used in the construction staking of buildings, utilities and roads.
4. Define and give illustrated examples of the use of horizontal and vertical control as applied to construction surveying.
5. When given the appropriate grading plan, determine the volume of material by the contour, grid and average end methods.
6. When given a site plan, locate and identify all the elements related to construction layout.
7. When given the necessary data, calculate and plot to scale a topographic map including site improvements.
8. Demonstrate how to read construction stakes for buildings, utilities and roads.
9. When given the appropriate data, calculate slope, horizontal, and vertical distances.

Topics and Scope:

1. Orientation and lab procedures.
2. Construction units of measurement, errors and accuracy.
3. Distance measurements by taping, tacheometer, and electronic distance measurement instruments.
4. Difference of elevation, levels and leveling techniques.
5. Methods and techniques of laying out horizontal and vertical

angles.
6. Principles and methods of construction layout.
7. Stakes, hubs, and control marks for construction control and layout.
8. Methods and application of building, trenching, pipelaying, road construction staking.
9. Measurement and computation of areas and volumes applicable to construction.
10. Principles and application of shafts, tunnels and offshore measurements.
11. Geopositioning by satellites.
12. Documentation of construction surveys.

Assignment:

Reading: 20 pages per week
Problem solving: weekly homework problems including field work.
Skills demonstration: minimum 2 graphic documentations of field work survey results
2-4 Quizzes and final exam

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems, field work, lab reports	Problem solving 20 - 30%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Field work, graphic documentation	Skill Demonstrations 40 - 50%

Exams: All forms of formal testing, other than skill performance exams.

Objective examinations, multiple choice, and free response	Exams 25 - 35%

Other: Includes any assessment tools that do not logically fit into the above categories.

None

Other Category
0 - 0%

Representative Textbooks and Materials:
Surveying With Construction Applications: Barry F. Kavanagh
Prentice-Hall, 6th Edition (2007)
Construction Measurements: B. Austin Barry
John Wiley, 2nd Edition (1988) Print on Demand