

Traditional Surveying Equipment

SURV 131 – 5 Credits – Sept 2011



Class Description:

This class provides a hands-on field experience with total station and autolevel surveying equipment based on traditional ground control. Students practice timely total station setup, control orientation, advancing traverse control, sideshots, timely autolevel setup, and level loops.

Location:

**WEI Headquarters Site
Haskell Business Center
1301 Fraser Street, A3
Bellingham, WA 98229**



Dates and Times:

The class is scheduled to run on **Tuesday and Thursday evenings at 6:00-9:00 PM from September 6th to September 29th**. This provides a total of (8) evening classes to cover the course material. In addition, the Instructor has the option to utilize Saturday mornings for survey fieldwork and other course materials. Please see the Class Calendar on the third page for details.

Tuition and Registration:

Tuition for this class is \$400. Tuition must be paid before the class begins. Program enrolled students have seniority for this class and should register online three-weeks before the class begins. Continuing education students may begin registering online two-weeks before the class begins. Students may also send class registrations by mail to the following address:

**Washington Engineering Institute
Registration Office
PO Box 483
Custer WA 98240**

School Provided Materials:

- **Survey Equipment:** The school provides the survey equipment necessary for the class with donated equipment time from the local industry. Donated survey equipment time helps keep classes affordable. Students must treat the equipment with respect and care to continue coursework opportunities.
- **Lecture Notes:** The school provides lecture handouts as needed.

Student Provided Materials:

- 3 Ring Binder, scientific calculator, small straight edge for sketching in field book
- Rite-in-the-rain field book
- Laptop computer with wireless capability
- Positive, motivated, respectful, and helpful classroom character

Instructors

Dave C. Bren, PE, MSCE Civil Engineering Technology Instructor

Experience: 15 years of experience in the public and private civil engineering industry. Most recent experience was as the Assistant Public Works Director for the City of Blaine. Mr. Bren established and taught the Civil Engineering Technology program at Bellingham Technical College from 1997-2006 while continuing to consult in the industry.

Registration: Professional Engineer
State of Washington

Education: Master of Science in Civil Engineering
University of Washington

Bachelor of Science in Civil Engineering
University of Washington

Robert Morse, PLS Land Surveying Program Instructor

Experience: 38 years of experience in the private surveying, civil engineering, structural, and forestry industries. Currently works as the survey manager for the City of Bellingham.

Registration: Professional Engineer
State of Washington

Education: Bachelor of Science in Industrial Technology
Western Washington University

Associates in Civil Engineering Technology
Everett Community College

Surveying Program
British Columbia Institute of Technology

Format:

Class Structure: Evenings will typically run in one-hour blocks as follows:

6:00 PM – Class setup and first hour
6:50 PM – Break
7:00 PM – Class
7:50 PM – Break
8:00 PM – Class last hour

Final Exam and Grades:

Grades will be determined by attendance character (25%), field book presentation (25%), and class projects (50%). The Instructor holds the sole authority to issue grades and shall issue grades based on a 4.0 schedule as follows.

Grading legend

4.0	A
3.7	A-
3.3	B+
3.0	B
2.7	B-

2.4	C+
2.0	C
1.7	C-
1.3	D+
1.0	D
0.7	D-

AU	Class audited with no grade earned
EXP	Experiential credit granted per policy
EDU	Prior education credit granted per policy
I	Incomplete – Instructor Allows Extra Time to Complete
W	Withdrawn from class

September 2011 – Traditional Surveying Equipment – SURV 131

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	
			1		2	3	4
5	6 Chapter 1 6:00-9:00 PM <u>Class and Equipment Orientation:</u> <ul style="list-style-type: none"> ◆ Autolevel ◆ Tape and Compass ◆ Field Book Notes 	7	8 Chapter 2 6:00-9:00 PM <u>P1 - Level Loop:</u> Advance an elevation benchmark to your site.	9	10 Optional Lab 8:00-NOON	11	
12	13 Chapter 3 6:00-9:00 PM <u>P2 – Grid Topo with Autolevel:</u> <ul style="list-style-type: none"> ◆ Use you elevation benchmark to conduct a topographic grid survey ◆ Conduct (16) point grid survey ◆ Prepare scaled topographic drawing by mathematic interpolation 	14	15 Chapter 4 6:00-9:00 PM <u>P3 – Compass Traverse:</u> <ul style="list-style-type: none"> ◆ Set (5) point traverse around building ◆ Conduct tape and compass traverse through points ◆ Conduct compass rule adjustment 	16	17 Optional Lab 8:00-NOON	18	
19	20 Chapter 5 6:00-9:00 PM <u>Total Station Orientation:</u> <ul style="list-style-type: none"> ◆ Total Station ◆ Turn angles and shoot distances in class 	21	22 Chapter 6 6:00-9:00 PM <u>P4 – Total Station Traverse:</u> <ul style="list-style-type: none"> ◆ Conduct total station traverse through same (5) points ◆ Conduct compass rule adjustment 	23	24 Optional lab 8:00-NOON	25	
26	27 Chapter 7 6:00-9:00 PM <u>P5 – Site Survey:</u> <ul style="list-style-type: none"> ◆ Use the traverse control points to survey the building and sidewalks. 	28	29 Chapter 8 6:00-9:00 PM <u>P6 – Draw Site Survey</u> <ul style="list-style-type: none"> ◆ Use plain AutoCAD to draw up the building and sidewalks. 	30			



PO Box 483
 Custer WA 98240
admin@weiedu.org
 (360) 739-1428

Class Registration Form 2010 v2.0

Returning students with a Student ID do not need to fill out the gray portions of this form.

Name	
Address	
Phone	
Email	

Class Requested	SURV 131 – Traditional Surveying Equipment
Class Month / Date	September 2011

WAC 490-105-160 – State Licensed School Reporting Requirements:

Student ID #		
SSN #		
Date of Birth		
Gender		
Disability	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Race	<input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian <input type="checkbox"/> Black/African American <input type="checkbox"/> Hawaiian Native or Pacific Islander <input type="checkbox"/> Hispanic <input type="checkbox"/> White/Caucasian <input type="checkbox"/> Multi-racial <input type="checkbox"/> Other	
Prior Education	<input type="checkbox"/> Less than high school graduation <input type="checkbox"/> GED <input type="checkbox"/> High School Graduate <input type="checkbox"/> Post H.S., no degree or certificate <input type="checkbox"/> Associate Degree <input type="checkbox"/> Bachelor Degree <input type="checkbox"/> Master or Doctorate Degree	GED Year _____ Graduation Year _____ Graduation Year _____ Graduation Year _____ Graduation Year _____
Name of Last School Attended		

Student Signature

Date