

Construction Surveying

SURV 234 – 5 Credits – September 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

Instruction by: Sam Kloes

GPS and Construction Surveying Instructor

Experience: 7 years of experience in heavy civil GPS construction-surveying. Mr. Kloes is currently the GPS Manager for IMCO General Construction.

Education: University of Minnesota, Twin-Cities

Format:

Class Structure: Evenings will typically run in three 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:

Students will be graded by attendance (40%), fieldwork character (60%). The Instructor holds the sole authority to issue grades and issues 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 – Construction Surveying – SURV 234

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	
			1		2	3	4
5	6 Orientation 6:00-9:00 PM <u>Class Orientation & Equipment Orientation:</u> ♦ Laser Level Orientation ♦ GPS Orientation	7	8 Laser Level 6:00-9:00 PM <u>Traditional Laser Level</u> ♦ Grade Hopping ♦ Hubs, Lathe, Terms, Abbreviations, and protocol	9	10 Survey Lab 8:00 AM - NOON	11	
12	13 Trimble Bus. Center 6:00-9:00 PM <u>Office Operations:</u> ♦ Plans Review for Staking Needs ♦ Trimble Business Center Overview ♦ TBC Layout and Planning for Road Staking	14	15 Road Staking 6:00-9:00 PM <u>Road Staking Methods and Procedures:</u> ♦ Conduct GPS Field Work ♦ TBC Layout and Planning for Utilities Staking	16	17 Survey Lab 8:00 AM - NOON	18	
19	20 Utilities Staking 6:00-9:00 PM <u>Utilities Staking Methods and Procedures:</u> ♦ Conduct GPS Field Work ♦ Building Layout & Staking ♦ TBC Layout and Planning for Cut/Fill Grade Checking	21	22 Grade Staking 6:00-9:00 PM <u>Cut/Fill Grade Checking Methods and Procedures:</u> ♦ Conduct GPS Field Work ♦ Slope Grading ♦ TBC Layout and Planning	23	24 Optional lab 8:00 AM - NOON	25	
26	27 Stockpile Volumes 6:00-9:00 PM <u>Stockpile Volumes and As-built Survey Methods and Procedures:</u> ♦ Conduct Stockpile Survey ♦ TBC Layout and Planning for Machine Automation	28	29 Machine Automation 6:00-9:00 PM <u>Machine Automation Methods and Prodecures</u> ♦ Conduct Machine Automation.	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 234 – Construction Surveying
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