



SURVEYING COMPETITION

PACIFIC SOUTHWEST CONFERENCE 2015

OBJECTIVE

- ◆ To evaluate team member's knowledge and understanding of land surveying equipment and techniques, as well as basic trigonometry in a timed setting

PARTICIPANT RULES

- ◆ Each University may enter only one team.
- ◆ Teams must be comprised of 4 members.
- ◆ Everyone on the team must be a registered participant of the PSWC 2015.
- ◆ The team must have at least one underclassman.
- ◆ The team must have at least one female.

EVENT DESCRIPTION

There will be three main surveying events. In the first two events students must use their skills in land surveying and knowledge in basic trigonometry to determine the bearing and distance between two points and the elevation of each of the points, and then find the value of a remote elevation. The third event will consist of steel tape measurement. Additionally, teams have the option to gain extra points through a timed instrument setup competition if they have extra time remaining at the end. All three events need to be completed within a 45-minute block, with the extra credit event only for those teams who have already completed the main events and have remaining time left over.

GENERAL RULES





1. Bearing and Distance:

Using a total station, the team of four will need to determine the bearing and distance between two points and the elevation of each of the points. The team must first determine the location of the each of the two points using given bearings and distances from a fixed back site point. Both a reflector and stakeout pole will be supplied to each team. Teams can spend up to a maximum of 20 minutes on this event.

2. Remote Elevation:

Teams will work to find the elevation of a building or other object from a remote location. A benchmark will be furnished. A single point observation is allowed. Total stations are permitted as long as it is not a reflectorless model.

3. Steel Tape Measuring:

The team of 4 will use a steel tape no longer than 100 feet to measure the distance between two points.

4. Instrument setup (extra points event):

From each team, 1 member may participate. Students will be timed on how fast then can set up a tripod. All 3 legs of the tripod must be retracted in the shortest position and locked inside a bag prior to the start. Timing will begin and the student needs to level the theodolite and tripod correctly over a given point. All teams will use the same theodolite provided at the start. The 3 groups with the best time will receive extra points according to the scoring below.

Instruments Allowed:





- Total Station (can't be reflectorless)
- Tripod
- Level rod
- Steel tape (no longer than 100 feet)
- Pocket tape
- Plumbobs
- Non-programmable calculator (EIT qualifying)
- Two hand held radios

SCORING

1. Bearing and Distance:
 - Accuracy – 40 points
 - Technique/Time – 20 points
2. Remote Elevation:
 - Accuracy – 40 points
 - Technique/Time – 20 points
3. Steel Tape Measurement:
 - Accuracy – 40 points
 - Time – 20 points
4. Instrument Setup (extra points event):

The three teams with the fastest instrument setup times will receive extra points as follows

 - First Place: 15 points
 - Second Place: 10 points
 - Third Place: 5 points

