

COURSE SLO ASSESSMENT REPORT, SCC

Department: Business and Career Technical Education
Course: Survey/Mapping Sciences 119 (Advanced Plane Surveying)
Year: 2014 Semester: Spring Course Number: Section #80579

1) Outcome to be assessed: (SLO #1 for SURV-119-80579)

Students will be able to calculate the accuracy and precision necessary to complete a common survey task and then select the appropriate land surveying instrument(s) to complete the task.

2) Means of assessment and criteria of success:

The means of assessment was a five-part question on the final examination focused on "SURVEYING ACCURACY / PRECISION". The question required correctly matching various degrees of precisions (relative accuracies) with the corresponding surveying methods, instruments and equipment.

Success is defined as a passing score of 70% or higher for this question.

3) Summary of data collected:

Each answer to the five-part question was scored and then compiled for each student.

4) Analysis of data:

Analysis of the performance (success or failure) was based on the scoring.

All twenty students who successfully completed the course also successfully completed this overall question with a 91% average. However several students had the precision of EDM (electronic distance measurement by total station instrument) rated higher than the precision of GPS surveying (distance measurement by the global positioning system using satellites). This result indicates some confusion and a need to improve instruction.

5) Plan of action/what to do next:

- Incorporate the above information into future lesson plans for lectures and lab exercises in order to improve instruction and eliminate any confusion concerning this SLO.
- Check student learning concerning this SLO with periodic homework and quizzes.

COURSE SLO ASSESSMENT REPORT, SCC

Department: Business and Career Technical Education
Course: Survey/Mapping Sciences 119 (Advanced Plane Surveying)
Year: 2014 Semester: Fall Course Number: Section #80579

1) Outcome to be assessed: (SLO #2 for SURV-119-80579)

Students will be able to apply their knowledge of coordinate geometry by determining the appropriate methodology necessary to layout the stakes for the construction of a building foundation, as well as horizontal and vertical alignments.

2) Means of assessment and criteria of success:

The means of assessment was through a practical field exercise- Lab #3 held on April 19th and attended by seventeen of the twenty students who ultimately completed this course. This field survey lab covered the procedure for the layout of a circular curve (horizontal alignment). After receiving detailed instruction in the classroom, students were randomly broken into four groups, issued instruments and equipment for the field work. Each group was given a radius and shown control points on two tangents. After measuring the angle at the point of intersection (or PI), they were then required to individually calculate and tabulate (onto a provided form) the remaining curve elements along with deflection angles and chords. Working as a team, students then laid out the curve by setting temporary points on the ground. Each group's field survey was documented individually with field notes.

Success of the field work for each group was determined by measuring certain of their final curve elements (external, middle ordinate, short chords, etc.) and checking them with their pre-calculated values. Success of the lab for each student was determined by the review of his/her curve tabulation (for accuracy) and his/her field notes against a rubric (for neatness, accuracy, completeness, etc.).

3) Summary of data collected:

Each student was provided a tabulation form to record measurements and calculations for the curve. The final measurements (as checks) were also recorded. Field notes were also prepared by each student showing the procedure and results of the field survey.

4) Analysis of data:

The Instructor reviewed each group's curve layout measurements, calculations and checks. Each student's final field notes were reviewed and checked against a rubric by the Instructor. All seventeen students passed each phase of this field survey with a very high degree of success. The three absent students (as well as the other students) later successfully demonstrated this ability by solving a curve problem on the final exam.

5) Plan of action/what to do next:

Further refine any lecture information necessary for this field survey lab.
Solicit additional feedback from students who participate in this field survey lab.