
UAS Pre-Engineering Program Assessment Report

Academic Year 2011-2012

Date: August 28, 2013

Data source: Diane Meador, UA Decision Support Database, compiled by UAS IE from closing extracts for AY12. Scope: Juneau degree CT1 with major PENG, courses ENGR S151, S161, and S193.

Goal 1. Increase the number of engineering majors in the state of Alaska by recruiting and retaining students in the UAS Pre-Engineering Certificate Program

a. Annual Assessment of Recruiting:

- i. Track the number of students taking 1 or more ENGR courses at UAS

Total enrollment for the three engineering courses (ENGR 151, 161, and 193) was 19 students, for a total of 41 student credit hours. In addition, 3 students enrolled in EE 102 through UAF, an introductory electrical engineering lab course facilitated on campus at UAS.

- ii. Track the number of new Pre-engineering majors

There were 22 students enrolled as pre-engineering majors during AY 2011-2012.

b. Annual Assessment of Retention:

- i. Track the number of Pre-Engineering certificates awarded

7 students completed the Pre-Engineering Certificate.

- ii. Track the number of students who transfer to a baccalaureate engineering program (in-state and out-of-state)

Four students transferred to UAF to pursue engineering BS degrees (1 civil, 1 petroleum, 2 mechanical); one student transferred to UAA to complete an Electrical BS.

- iii. Track the number of Pre-Engineering students retained at UAS through a change of major

One student was retained at UAS at a Math major.

- iv. Track the number of UAS Pre-Engineering students who complete a BS in engineering at UAA or UAF

No UAS cert students have completed a BS (to be expected at this point due to the age of the program).

Goal 2. Foster an interest in and understanding of the engineering profession and opportunities in Alaska with an emphasis on Southeast Alaska.

- a. Annual Assessment:
 - i. Track number of student internships/employment with local engineering firms

Five pre-engineering students, to my knowledge, held engineering-related internships or employment with local firms during the summer of 2011. Employers included HECLA Greens Creek, AEL&P, and Miller Engineering.

- ii. Track the number of students who complete the engineering seminar

Eight students completed the ENGR seminar course in Spring 2011.

Goal 3. Prepare students academically for transfer into the 2nd year of a 4-year baccalaureate engineering program, with emphasis on UAA and UAF.

- a. Student learning objectives: Develop skills in problem solving, teamwork, engineering ethics, and communication
 - i. Review student design projects from ENGR 151
 - ii. Review programming projects from ENGR 161
 - iii. Review final papers from ENGR seminar

Students completed group design projects(with presentations) in ENGR 151, a newly-added group programming project in ENGR 161, and a final paper and (newly added) short presentation in the ENGR seminar course. These projects and presentations added emphasis on teamwork, communication skills, and self-directed research. Students enrolled in all three of the ENGR courses showed improvement in their presentation skills, demonstrated by the ENGR seminar presentations.

- b. Student transfer objectives: Ensure a fluid transfer of individual courses and pre-requisites so that students can begin taking 2nd year engineering courses immediately upon transfer
 - i. Exit surveys (upon transfer from UAS to an engineering BS program, and upon completion of their first year post-UAS) with a focus on preparedness, course transfer and course sequencing

Follow up with matriculated students through email did not indicate any issues with course transfer or preparedness. I received requests for letters of reference for engineering-related scholarships and internships from 3 of the 5 students who matriculated this year.

- ii. Annual meeting with UAA and UAF faculty to discuss areas of concern with respect to academic preparedness and course transfers specific to UAS transfer students.

While not accomplished through a specific meeting, coordination with UAF and UAA engineering faculty is ongoing. Our articulation agreement with UAF indicates UAS students must take ENGR 161 along with CIOS 170 (6 credits total) to transfer for ES 201 (3 credits). However, all programs at UAF, except for electrical engineering, are accepting ENGR 161 directly for transfer.