# Pre-Engineering Advisory Committee

# Meeting Minutes

April 17, 2018

Members Present: Vince Cain, P66; Doug Worley, Kay Electric Cooperative; Derek Hitt, GEFCO; Joe Greenlee, Ditch Witch; Deanna Farmer, Enable MidStream. NOC members present were Dr. Pam Stinson, Dr. Rae Ann Kruse, Tricia Moore, Dr. Frankie Wood-Black, and Dr. Jack Cnossen.

Dr. Stinson welcomed the board and expressed appreciation for their serving as members of the first Pre-Engineering Advisory Committee. Dr. Stinson introduced the NOC members present and asked the committee members to introduce themselves.

Dr. Frankie Wood-Black gave a program overview, referring members to the degree sheet in the packet. Dr. Wood-Black answered questions regarding the ability of students to transfer easily to OSU or OU. Student ACT scores are honored at major Oklahoma universities. We also align with OSU and OU with CLEP cut scores.

Tricia Moore commented that engineering enrollment numbers are on the increase. Courses are offered on a rotation (sequencing). For example, Physics I is taught in the fall and Physics II is taught in the spring. Dr. Wood-Black added that if students are out of sequence, they can get on track by taking courses over the summer. OSU students also take NOC courses during the summer to meet OSU program sequencing patterns.

Enid students taking ITV classes meet with the instructor in person at least twice a week. Enid students complete lab classes in Tonkawa and Frankie teaches from Enid one day per week.

Dr. Wood-Black also referred members to the scholarship flyer in the packet and discussed the importance of funding for students.

Dr. Kruse provided information about pre-engineering internships and discussed the importance of internships for students, especially the ones who are unsure about which specific area of engineering they would like to pursue. Deanna Farmer added that internships help young people be workforce ready. Dr. Kruse described students who were encouraged by high school math teachers to major in engineering because they were good at math, but the students did not understand all the different options available in the field of engineering. Dr. Kruse explained the internship requirements for students and the responsibilities of the hosting agency. GEFCO has offered to host a summer intern.

Tricia started the discussion with the following question—“Having reviewed the degree sheet, what courses did you find valuable in your first or second year of college that we might consider adding?” Responses included requests for an electrical power course. Basic electricity would be helpful to students since there are not many power options in degree programs. Vince Cain recommended a one-hour Introduction to Engineering Disciplines so students make informed choices as they move forward in their degree program.

Tricia asked, “If you were hiring an intern, what skills would you expect from a freshman or sophomore?” Suggestions included developing teamwork skills, the ability to take criticism, ability to present an idea, and be comfortable pitching an idea. Problem solving skills were also mentioned and understanding what the real problem is, the importance of calculations being exact, the ability to talk to a stranger, interaction skills, and the ability to draw/put ideas on paper.

SolidWorks experience is a benefit for students. Ditch Witch trains their new employees to use SolidEdge but would appreciate new employees having some software experience. Ditch Witch also needs 3-D modeling. Frankie is offering a SolidWorks certification class this summer via directed research. An introduction to SolidWorks will become part of the Engineering Mechanics I class and the plan is to use SolidWorks to build a catapult in Engineering Physics class. Dr. Wood-Black would also like to add an electricity module to Engineering Physics II.

Tricia followed with an explanation of the proposed relationship between the NOC Pre-Engineering program and the Bell Program offered through Minnesota State University. MSN contacted NOC last fall. We hope to have the first class start in July 2019. We have 4-5 students interested who will be traveling to Minnesota this summer to look into the program. The students would need to finish their associate degree with us. The students would stay in MN for five months studying professionalism (soft skills) curriculum. MSN would provide housing then students would return to their home state. Over the next two years, the students would continue coursework online and connect with a mentor weekly. The student would work in the engineering field simultaneous over the next two years.

Vince Cain commented that it is quite an investment to ask of a company. Tricia agreed and said this is a nationwide program and the application process is competitive. The co-op does not have to keep the student the full two years if the student does not work out. The Bell program touts an 82% placement rate of students with the company they interned. There was concern that area industry may need data showing results before they buy in. Another member thought it was an interesting approach and sees the value for the student who needs to work full time while in school.

The group suggested meeting twice a year during lunch. Members asked enrollment numbers (8 in Fall 2015, 24 in Fall 2016, and 32 in Fall 2017) to show a growing interest in the program.

The meeting adjourned at 1:30 p.m.