Why You Should Take Pre-Engineering Courses at Rogue Community College

Engineering is in great demand which results in high wages and very low unemployment. One reason for this shortage of qualified engineers is that an engineering degree requires more work than most other degrees. Starting at Rogue Community College with small class sizes and instructors whose primary emphasis is teaching rather than research is a great way to begin this pathway.

Engineering degrees have some of the highest number of credits to graduate. The least number of credits for an engineering degree is about 180 and the most is about 200. As a result, most engineering students take more than four years to graduate from their bachelor’s degree. If a student is ready to start calculus, has good writing skills and can take 16-18 credits per term (including summer terms) of primarily math, science and engineering courses, then getting through in four years can be achieved. In particular, the number of science and engineering course credits can underrepresent the amount of work involved. Many of these courses have two- or three-hour labs for which only credit is given. (If this were not the case, very few students could afford the tuition to be science, pre-med or engineering majors.) Students who are working, have family responsibilities and/or other non-school obligations should probably take no more than twelve to fifteen credits a term. At twelve credits a term, this would give about sixteen terms for a 190 credit degree. Even with some summer courses, this would result in five years for completing the degree. This does not take into account any classes you may need to take in order to be ready for those classes that do count towards your degree. As an example, you need College Algebra (MTH 111) and Elementary Functions (MTH 112) before you can start Calculus I (MTH 251) which is the lowest level math class that counts towards an engineering degree. Those students who do attempt to complete an engineering degree in four years spend much more time studying compared to other students (which shouldn’t be a problem for you), are unprepared for classes (which is a problem) and more likely to drop out of the degree (which is expensive in the long run due to lost wages of not working as an engineer).

To be permitted to take upper-division engineering classes, you need to be accepted into the engineering professional school or “pro-school” at most engineering universities. (Oregon Tech doesn’t require a pro-school application.) This requires that you first apply and be accepted into the university you wish to attend. After that, having taken some core classes for a particular engineering degree, called “pre-engineering” courses, and passing with a sufficiently high grade, you can apply and hopefully be accepted into the College of Engineering (pro-school) at the given university. Only once accepted into the pro-school can you progress towards completing your engineering degree. For many of the engineering disciplines at Oregon State University and Portland State University, the courses now offered at Rogue Community College will allow you to apply directly to pro-school before you transfer! Historically you’d have to transfer to the university, take the classes to apply to pro-school and maybe get in. If you didn’t get in, it can be a costly thing to have done. Knowing ahead of time that you’ve been accepted to pro-school before you transfer allows you to save that expense if you don’t get in. (You can retake pre-
engineering classes at Rogue Community College for a higher grade if need be in order to reapply to pre-school the following year and get in.)

It’s usually a good idea to take more courses at Rogue Community College than just the pre-engineering classes required for pro-school admission. Paying for your general education courses (e.g., history, literature, etc.) at Rogue Community College tuition rates ($104/credit) rather than, for example, OSU pro-school tuition rates (which you have to pay for even non-engineering classes) at $334/credit will save you thousands of dollars. So even if you are able to cram all the degree-specific classes into two years, you may be better off financially to spread those courses out over another year or so and add a general education class each term. Choose your general education courses carefully so that they will transfer as needed for a given degree.

The financial aid issues related to all of this can be challenging. Meet with financial aid advisors early on in this process as there are special issues with all of these required credits. For example, with the GI Bill, four years of college are covered if you use it wisely. If you have this resource available, you may want to take only a year at RCC before you transfer as the following years will be covered. If you pay out of pocket for the first year at RCC, you won’t have to pay out of pocket for the last year at university. Be warned, GI Bill benefits have the combined bureaucracy of the military, university and federal financial aid. Meet with the campus VA councilor early on before tackling the paperwork by yourself.

While this document addresses some of the issues involved with getting an engineering degree, please contact me at jRittenbach@roguecc.edu for a personal advising appointment to help figure out the best schedule for your specific needs. I teach full-time every term (including summer) so I have many advising times available every term.

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12 December 2017 version