

Guidelines for COEN Advisors and Students proposing to Substitute or Waive ENGR 120

Note: ENGR 120 meets ABET outcomes B, and D.

Background:

ENGR 120 is a required course for many of the majors offered by the College of Engineering at BSU. The purposes of ENGR 120 are many but include the following:

- Introduce the student to the profession of engineering and to some of the student disciplines required for student success.
- Review and application of math skills leading up to MATH 170, Calculus I. Those skills include algebra, vectors, trigonometry, linear algebra, and sinusoids.
- An introduction to MATLAB as an engineering problem solving tool.
- Practice working as a member of a multi-disciplinary team.
- An introduction to basic electronics and basic mechanics.
- An introduction to open ended engineering design as well as the design/build/test process.

Because of its unique set of purposes, ENGR 120 is often not equivalent to Introduction to Engineering courses offered at other institutions. However in some unusual situations, students may have taken a set of courses at another institution to qualify for a course substitution. Other students may have work/life experience plus coursework that may qualify the student for a waiver of the course.

Substitutions:

Students who can show proficiency in Math 143, 144, and 170 and have taken course(s) at other college level institutions that cover substantially all of the purposes named above may apply for a course substitution using the Academic Adjustment form. The advisor should fill out the form and forward it for signature by the ENGR coordinator and the Associate Dean. If it is not obvious from the student's transcript, but it is the opinion of the advisor that the student is ready for the follow on courses, a written explanation of why the academic adjustment should be made must accompany the Academic Adjustment form.

<http://registrar.boisestate.edu/wp-content/uploads/2013/06/academicadjust.pdf>

Waivers:

In certain unusual situations, ENGR 120 may be waived for students pursuing an engineering degree at BSU. This is only possible if the student is admitted to BSU, has the math skills needed, and has work/life experience and/or coursework which have substantially filled the purposes of ENGR 120. A waiver of ENGR 120 does not mean a waiver of the university DLN requirement (disciplinary lens, natural sciences).

Below are guidelines for how to build an academic adjustment that waives ENGR 120. There are two steps. First, the student needs to create a petition that contains the information outlined below which

should be submitted to the Engineering Advising & Outreach Office. Second, the advisor will attach the petition to an academic adjustment they author.

Student: If you desire to have ENGR 120 waived as a requirement, you must write a petition. Your petition should demonstrate that you have effective written communication skills and contain the following elements.

- Students must show proficiency in Math 143, 144, and 170 or give evidence of your ability to effectively use math in the context of engineering. This evidence can be a transcript or recent math placement scores.
- Your description of a minimum of two years of relevant work experience (name of company/employer, years of employment, titles of positions held).
- One example of an initiative involving experimentation, data collection or data analysis that you spearheaded or participated in to a significant extent (half-page write-up) OR an example of an engineering design project where you had significant contribution. Be careful to not violate your company's confidentiality expectations with the material you provide in the petition – clear it with your supervisor if you are in doubt.
- A description of how you have worked as a member of a team, solving problems (should be related to an engineering application).
- Description of work experience, training, or coursework in electronics OR evidence of MATLAB or other programming skills.

Advisor: Verify that the student meets the course prerequisites and is pursuing an engineering degree at Boise State University. Verify that the petition contains the appropriate documentation. Prepare an academic adjustment containing the student petition and then forward to the ENGR coordinator and Associate Dean for signature.

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