Can I take PDES 5711 as a Technical Elective?

May 13, 2014

The requirements for considering Toy Product Design, PDES 5711, for Technical Elective credit in mechanical engineering are:

1. You earn a minimum of a “C−” in ME 3222 and ME 3281 prior to taking PDES 5711.

2. You petition to use PDES 5711 as a Technical Elective in advance of taking the class. The petition must state all other classes that you intend to use as Technical Electives. You are not guaranteed that PDES 5711 will be allowed until your petition is approved. The total set of Technical Elective classes that you propose will be evaluated holistically for sufficient technical depth as part of the approval process.

   The petition form is available at:
   
   http://policy.umn.edu/forms/otr/otr172.pdf

   You can submit the petition in ME 1120, the Student Advising Office.

3. You notify the instructor of PDES 5711 that you are in the mechanical engineering program so that your project work is evaluated on the basis of engineering rigor as well as creativity.

   You are expected to apply modeling and analysis skills learned in the “core” ME classes in your PDES 5711 project. You are expected to go beyond the basic ME 2011 skill set of creating geometry in a CAD system and programming a microprocessor. Specifically, you are expected to do some “analysis-driven design”; e.g., write some equations to improve your design. For example, you could create a mathematical model of your design using methods learned in ME 3281 and use it to optimize your design through simulation prior to building a prototype. As a second example, you could analyze a critical component for fatigue failure using methods learned in ME 3221. As a third example, if your toy involves heat transfer, you might estimate temperatures at critical points or power input required using methods learned in ME 3333.