**2.70 2.77 Fall 2023 FAQs**
Created: 2 August 3, 2023
Revised: 3 August 3, 2023

It is hoped that these questions from students about 2.70/2.77 and answers may be helpful for students considering the class. Q&A will be added periodically.

Recap: The goal of this class is to help students develop a research proposal as it relates to their thesis. If you already have one, then you are one step ahead, and you can refine it in this class. This will really help you when writing your thesis (the research proposal is like an outline) and for doctoral qualifying exams should you take them. I will be providing an example in the format of an NSF proposal for creation of a rapid battery swap standard.

There will not be a new project, from my lab for example, that students can sign on to do. Why? Often as the semester rolls along, students find in their excitement they overcommit and then leave the project and this then causes trouble for other team members of a "group project"

Q: Since I already have a thesis that I am working towards, how does this proposal work as thesis research ?

A: As above, even if you HAVE a thesis proposal, then refine and make it better!

Q: It sounded like we are going to build a critical module that will validate the proposed project potential. Is there a budget the course provides for this ?

A: No official budget. Since it should pertain to your research, your advisor should be happy to fund the module build and test. For first semester first years, we can figure something out if needed.

Q: Will there be opportunities to get a quick primer on the CNC milling machines on campus ?

A: There are many maker spaces that do this. It will not be part of the class

Q: Can the proposal be done independently or is it a team-based activity ?

A: The work is best done independently-see above

Q: Also having worked in aerospace manufacturing industry before grad school, as far as my experience goes development of precision products usually requires good tolerancing techniques (including proper application of GD&T and good understanding of CNC fixturing). Would we be able to produce/get feedback on drawings made with such techniques ?

A: Yes

Q:  Is there an application process to be able to take this course next semester ? (I have pre-registered already)

A:  No-I think as long as students honestly look at the pre-requisites and self-select we should have plenty of room

From another student:

Q:  Project considerations for the course. My research fabricates soft actuators, which doesn't necessarily lend itself to any possibility of a precision machine design project that would be obviously useful or related to my work. Kait has expressed this same concern. Would I be able to choose a separate and at least slightly unrelated project if this is the case? Would we be working in groups and thus I may not have to be concerned that my research isn't the most appropriate fit for this class's design? Etc.

A:  I do not have the bandwidth to help students with entirely new projects in which they might be interested, nor can I accommodate them "helping" on projects in my lab because if a student drops or falls behind, it derails my ;lab research.  By students working on project related to their research, their research advisors can be helpful, and there is much lower chance of the student needing to drop the class because they are behind on their research.

Q:  For context, I have taken only 2.810 so far and have essentially not taken any course equivalent to 2.001, 2.007, etc. Somewhat obviously, but unfortunately, there aren't many grad courses that give a nice introduction to machine design. I have also been practicing making simple things useful to my research but that's basic CAD and 3D printing or laser cutting mostly.

A:  You would get a whole lot more out of 2.77 if you could take an introductory mechanical design class such as 2.70.