BME 180A-C Senior Design

Project Options:

- **Industry Track**: Projects designed to explore the engineering design process
  - Commercialization is *not* expected
  - Develop a research proposal
  - Present at an engineering design competition
  - Industry representatives serve as mentors

- **Entrepreneurial Track**: projects with existing intellectual property designed to explore the commercialization and start-up process
  - Commercialization *is* expected
  - Develop a business plan
  - Present at a business competition
  - Engineers serve as mentors

Course Timeline:

- **Fall Quarter**
  - Team formation, project definition and planning, addressing clinical need, FDA and technical documentation, initial experimentation on possible design solutions, decision on chosen design.
  - Industry Track: develop research components of the project, UROP proposal
  - Entrepreneurial Track: develop market study, first-draft business plan

- **Winter Quarter**
  - Focus on the implementation of the chosen solution and redesign to a more detailed design. Mid-course adjustment may be needed, depending on the findings.
  - Industry Track: continue research tasks as part of the project development
  - Entrepreneurial Track: continue business plan as part of the project development

- **Spring Quarter**
  - Pursue final testing, validation, and revision of the design solution followed by a complete documentation.
  - Industry Track: present as an engineering design competition
  - Entrepreneurial Track: present at a business competition

Team: Groups of 5-6

- **Team formation process:**
  - Step 1: Perform DISC Assessment
  - Step 2: Identify which team members will work best with you given your motivators, behaviors, and preference
  - Step 3: Identify which projects fit best given your personal interest and desired career path.
An Unmet Clinical Need Reverse Pitch Night will occur where representatives from the engineering industry present on project ideas. Students will select which project they would like to work on. This ultimately sets up who will be in which team.

Funding: Groups are given a certain amount of money to begin work on projects, but other means of funding are required.

- Industry Track: Must submit a UROP Proposal to obtain more funding.
- Entrepreneurial Track: Must submit a Student Startup Fund Proposal to obtain more funding.

Specializations
Specializations are not required but can be used to clear the Technical Elective requirements for BME students.

- **Biophotonics (3 courses)**: Learn about the application of optics in the Biomedical Engineering industry. This includes imaging, spectroscopy, and photomedicine.
- **Micro and Nano Biomedical Engineering (3 courses)**: Learn about engineering, manufacturing, and design at the smallest scale. This includes microfluidics/lab-on-a-chip, BIOMEMS manufacturing, nano-scale materials, and micro implants.