Accessibility and Inclusion Policies for Curricular Structure, Creating Community and Accommodating a Variety of Learners

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CURRICULAR STRUCTURE

- Course sequences are arranged so that a **student can start in Precalculus** and still get through in 4 years (most engineering programs require students start with Calculus I).
- **Physics sequence begins in spring** instead of fall semester so that all students have at least one college-level math course first, increasing their chances for success in physics, and allowing cohorts to take physics together instead of being split up if they are starting with precalculus instead of Calculus I.
- First project course is freshman fall, second project course is sophomore spring, making it **possible for more transfer students** to complete major within their original college timeframe (making transferring into engineering more accessible - most engineering programs are extremely hard to transfer into).
- (equally a community-building strategy) We created **Summer Zero**, a 6-week program specifically for incoming freshmen to ease the transition into the college environment, especially coming from under-represented backgrounds - 1-unit courses in math, writing, and programming help to equalize the skillset going into the first semester, plus exercises in asking for office hours and basic communications with staff and faculty, workshops about imposter syndrome, etc.

COMMUNITY

- About once per month the Engineering Department has a **"Family Dinner"** during which students are invited to bring up any topics they feel need discussion - courses, the program, things on campus etc. They can speak up then, or write their comment/question on a card to be read out by a designated person, or add things to a suggestion box between sessions. Once all issues are written on the board, we discuss them as a group, usually with older students leading the "solution" part of the conversation.
- **Student clubs** are encouraged and well-supported, and we now have 6 highly active clubs in just 4 years. They attend conferences, put on events jointly with other clubs or on their own, and have a strong presence in the student body.
- There are multiple opportunities for **student employment** within the department as well as the associated Innovation Hive, utilizing and supporting a diverse array of skills and personalities - from hands-on work to social media management, and everything in between - adds to a sense of ownership and care for the community.

- We have hired **tutors for math and physics** courses in addition to those hired by those departments, and support extra office hours for students who prefer the smaller tutoring environment.

COURSES

- Students in Physics 130 write down and turn in **one positive and one negative** at the end of every lecture - positive would be something they really understood in that day's lecture, or felt good about; negative would be something they still don't get or have some question, or doesn't sit well. Doing this every lecture was to get them comfortable with providing feedback or expressing their level of understanding instead of waiting for their scores to suffer, also acts as a mini survey so the instructor can go over something more the next time, if many people didn't understand the same thing.
- Quizzes are **conducted on Canvas** and remain open for about 3-4 days during which the student can choose their best 15 minutes (or whatever time limit that quiz has) during which to take the quiz. This allows them to control their environment to be as conducive to quiz-taking as possible. Some control looking over the students' notes is sacrificed, but usually the time window makes cheating difficult.
- In the Introduction to Construction Materials course, which includes a half-term research project on a materials-related topic of their choice, students are **encouraged to pursue topics outside of European/North-American conventions**. This was especially exciting during the remote year since many were in their home settings, with access to reference papers and resources in other languages as well as English-language resources through our library's engineering databases. It was another way for us to **emphasize the value of wisdom from communities and regions not historically represented** in our codes and conventions.
- Although STEM courses are often heavy with technical info that needs to be taught, it is possible and even easy to **accommodate many learning styles** by having assignments that range from quantitative problem sets and quizzes, to drawing and graphical exercises, to visual/oral presentations with physical prototypes, to physical making and experimentation, even within one course so that every student can find one or more methods of expressing their knowledge that come easier to them, and one or more that challenge them.