ECE Undergraduate Core Courses Committee Meeting
Thursday, November 15th, 2023

Attending: Arabshahi , Cao, Chen, Eley, Hameed, Makhsous, Overly, Pippin, Shepard, Subhasmita, Swanson, Van Fossen, Wilson (Chair)

Agenda:
1. Review of Previous Meeting Minutes for Approval
2. Discussion of EE 201: Computer Hardware Skills
3. Discussion of EE 280: Exploring Devices

Minutes of October 25th: Postponed for Time

Discussion of EE 201: Computer Hardware Skills

EE 201: Computer Hardware Skills was introduced for a first offering in Autumn 2022. The course is one of the core courses all BSECE students are required to take as part of their degree. The committee asked previous instructors of the course to participate in a discussion of the course.

- The course is faculty/TA intensive. The course is a one credit course of approximately 100-120 students each quarter, for 100 – 120 student credit hours (SCH).
  - Standard course is 1 instructor and 1 TA for a 120 SCH course.
  - Spring 2023 had one lead TA and 3 additional TAs for 120 SCH
  - Autumn 2023 has one faculty instructor and 5 additional TAs for 120 SCH
- The format of the class makes it difficult for an instructor since the times are spread out, and there are generally about 15 total hours of lab time that need to be covered.
  - No lectures, and students select from one of the 24-student lab sections that meet once a week with an average of 5 lab sections available per quarter.
- The Lab Manager spends time before and after each lab section as well to set up and break down the lab.
- One option proposed was to create a lecture section for the course that would meet once a week for an hour to present the necessary content and shorten the lab periods to 2 hours.
  - Would remove need to provide an information session at the beginning of each lab to teach the same material to all students.
  - Cao and Eley both expressed concerns that students would forget the information before they had their lab period.
- Hameed mentioned that students express interest in learning more about PCBs, and Hameed believed it was really better suited for a 3XX or 4XX level course closer to graduation and after students had more experience.
- The option of removing some skills from the course was discussed
  - Git could be moved to another course, such as EE 241: Programming for Signal and Information Processing Applications.
  - Might also be able to remove the Arduino content.
- Cao, who was the lead TA for the initial offering of EE 201, pointed out that one of the main purposes of the class was to have a hand-on course.
  - Many students mentioned it was their favorite EE course.
- Chen discussed his summer special topics course, "Making, Breaking, and Hacking Stuff."

- o 3 credit course.
- o Covered most of what 201 does.
- o Arabshahi wondered if the course could be scaled up to replace 201 in the core.

Discussion tabled for time, with Chen agreeing to work on a revision of the EE 201 Master Course Description (MCD) and present to the committee at a later meeting

Discussion of EE 280: Exploring Devices
EE 280: Exploring Devises was introduced for a first offering in Autumn 2022. The course is one of the core courses all BSECE students are required to take as part of their degree. The committee asked previous instructors of the course to participate in a discussion of the course. Majumdar was unable to attend. Chen is present and taught the course for 4 of the 5 offerings thus far.

- Wilson provided overview of the course and concerns:
  - o As originally designed, the course has too much content and needs revision.
  - o Majumdar (not present), Chen and Wilson created a revised MCD for the course. ([MCD])
  - o There is a need to coordinate with EE 215.
  - o Once the department has moved fully from the BSEE to the BSECE degree, the hope is that EE 280 with fit better with EE 331, with less overlap between the courses.
- Revision:
  - o Shortens learning objectives of electronic devices.
  - o Adds a bit more on optical devices.
  - o Labs are not fully synchronized with lecture content, but labs never move beyond lecture content.
    - ▪ Labs will fall behind, but they catch up by end of course.
  - o Likely to eliminate the "as time permits" project as there has never been time so far in the offerings.
- Shepard noted his experience in the course:
  - o Reductions of labs 1 and 2 in revised MCD are in line with student feedback.
  - o Other lab modifications seem appropriate.
  - o When he took the course, the scaffolding of the lab reports was a positive in his experience.
- Arabshahi asked about how the course fit with other circuits courses, overlap with EE 331, for example.
  - o Wilson responded that EE 331 will be revised once all BSEE students have moved through the program and the department only has the BSECE degree for undergraduates.
  - o While some faculty may want greater depth of analog circuits, there is not room to accommodate all the requests of the analog circuits group.
  - o Arabshahi suggested bringing Rudell (not present) into the conversation.
  - o Chen mentioned that EE 215 was not a prerequisite for the course, so increasing coverage of analog circuits is not really feasible.
    - ▪ In the future, after a revision of EE 331, might be possible to increase coverage of analog circuits.

ECE Undergraduate Core Courses Committee Meeting
Thursday, November 15th, 2023

- Chen discussed his experience teaching EE 280.
  - Removed a lab to make sure the course made it to the final lab, which was important.

  Discussion tabled for time and will need further discussion at a subsequent meeting.

Action Items:
- Chen to meet with stakeholders of EE 201 for suggested revisions to the course.
- Wilson will reach out to Rudell to discuss suggested revisions to EE 280.