Course design and pedagogies: guiding engineering students' learning experience through student-initiated projects

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Technology and Society
HOW TO CREATE?

We create things to solve a problem via an engineering design process.
There is always a better solution somewhere.
Course design

Learning outcomes

Deliverables

Measurement
Starting from an embedded-system course

Departmental level – ECE UG Course

Student initiated projects

Team size: 2 – 3 students

Evaluated by Project Grading Rubric

From project idea to prototype design
In the course design, we address:

- How can I get the project idea?
- How do I know the feasibilities of project idea?
- How can I get the reflection from peers, teaching assistants and professor?
- Which knowledge do I learn in class and how do they link up?
In the course design, we address:

- How does the practical experience help in project design? (lab)
- How do you grade my project?
- Who grade the project? Is the grading fair?
- How can I get support for those technologies which are not discussed in class?
• Showcasing Good Teaching practice at HKUST
  – Center of Education Innovation
• An email from an international student in Spring 2014/15
  
  - I've decided to write you a small note, thanking you for your help. I enjoyed being taught by you immensely; you are an excellent teacher and have inspired me to continue learning with an open and positive mind. I appreciate all your hard work, it's meant so much to me. Once again, thank you so much for your time, expertise and patience!
Comments from students in SFQ

- Hands on experience to boost your creativity
- Projects! I love projects. And lecture videos~
- Provide a great freedom for student to work on the project they interested in
- The content of the course is interesting
- The course allows students to apply technical knowledge to a very tangible product. I like that the course is not tested by a final examination, but rather a more accurate assessment of what the students have learned.
- The labs are helping the project a lot
- This is a dream-landing course for us to do whatever we want, and better still, it encourages engineers to care for the community.
- Very stimulating
Beyond the courses

• Design Competition and/or Final Year Project

Braille Printer
Rehab tools
Thank you.