Course Description

This laboratory-based course introduces students to the fundamentals of a robot. The course will help to answer the following questions: How does a robot sense its surroundings? How does a robot acquire its power? How does a robot control its motion? And how does a robot think? Students will learn how to design a robot through a step-by-step design laboratory.

Topics

1. Tools and Components
2. Providing a stable power
3. Synchronization of actions by clocking
4. Controlling speed of motors
5. Converting electrical information to action
6. Sensing the environment
7. Making decision with logic Integrated Circuits

Grading Scheme

- Completion of class project (40%)
- Quizzes (30%)
- Lab reports (30%)

[Topics and grading schemes are subject to change as deemed appropriate. Students will receive information and guidelines in class on how they will be assessed for the course.]

Instructor

Prof. Mansun CHAN

Prof. Chan received both his BS degree in Electrical Engineering (highest honors) and BS degree in Computer Sciences (highest honors) from University of California at San Diego. He completed his MS degree and PhD degree at University of California at Berkeley. Prof. Chan has joined the EEE faculty at HKUST in 1996. He is now Professor of the Department of Electronic and Computer Engineering and also Advisory Board member of the Nano Fabrication Facilities at HKUST. He is also Fellow of IEEE and Distinguished Lecturer of IEEE EDS Society. Prof. Chan is a recipient of a number of awards including the Teaching Appreciation Award and The Engineering Distinguished Teaching Award. He has been teaching SISP 1302 for Summer Institute since 2011 and has received excellent teaching evaluations from high school students he had taught in the past.