CENG4480
Lecture 01: Introduction

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香 港 中 文 大 學
The Chinese University of Hong Kong

Overview

Important Notes

Course Overview

Grading System

Overview

Important Notes

- Be PUNCTUAL to class

- Keep QUIET during class, unless
    - you are raising questions to teachers or tutors
    - during in-class activities

- DONT OVER-ENGAGE in extra-curricular activities or part-time jobs

Academic Honesty

Zero Tolerance

- ▶ Plagiarism, cheating, misconduct in test/exam will be reported to the Faculty Disciplinary Committee for handing.

Penalty

- ▶ Zero marks for the concerned assignments/test/exam/whole course, reviewable demerits, non-reviewable demerits, suspension of study, dismissal from University.

University Guidelines to Academic Honesty

- ▶ http://www.cuhk.edu.hk/policy/academichonesty/

Overview

Overview – Part A

How to build up a Robot?

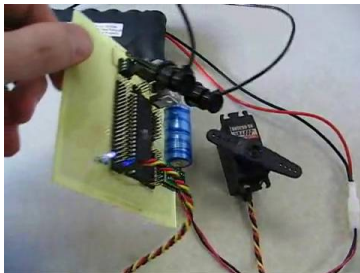# Overview – Part A

A1 Sensors
- Use of different sensors and their characteristics

A2 Op Amps and Analog Interfacing
- How to connect sensors to systems

Sensor demo (http://www.youtube.com/watch?v=9NEiBDBXFEQ)

Overview – Part A
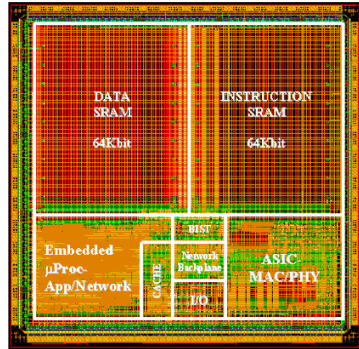
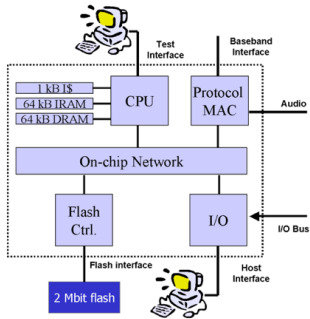**A3** Analog-to-digital conversions ADDA
- Internal operations of different ADDA devices

A4 PID controller
- feedback control of motors
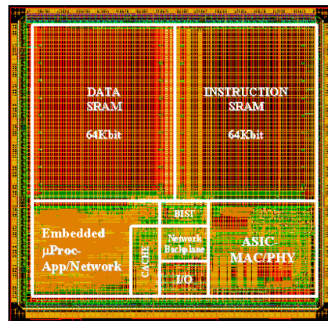
Overview – Part B

How to design an IP Core?

Overview – Part B

B1 PCB

B2 Clock

B3 Memory

B4 Design Style

Overview – Project Demos

- Demo 1: Self-Balancing Robot
  `https://youtu.be/dQWATsLa30g`

- Demo 2: Robot Car w. Color Sensor
  `https://youtu.be/PKCPdWjZCqY`

- Demo 3: Robot Hand
  `https://youtu.be/ai94rHHuaXc`

Overview

Grading System

- Class Attendance
- Homeworks
- 11 Labs
- Midterm Exam
- Final Exam
- Final Project

A student must gain at least 40% of the full marks in each part in order to pass the course.

Grading System

- Class Attendance (5%)
- Homeworks (10%)
- 11 Labs (25%)
- Midterm Exam (20%)
- Final Exam (40%)
- ~~Final Project~~

A student must gain at least 40% of the full marks in each part in order to pass the course.

Grading System – Tips

- Individual lab (academic honesty!)

- About Absence in mid-term

- Class attendance: in-class quiz
  Ex:
  http://www.cse.cuhk.edu.hk/~byu/doc/quiz_example.pdf

- Lecture review

- Bonus question

- Please read your marks from elearning
  (https://elearn.cuhk.edu.hk/webapps/login/)