香港中文大學
The Chinese University of Hong Kong

CENG2400 Embedded System Design

Lecture 00: Course Information

Ming-Chang YANG

mcyang@cse.cuhk.edu.hk

Thanks to Prof. Q. Xu and Drs. K. H. Wong, Philip Leong, Y.S. Moon, O. Mencer, N. Dulay, P. Cheung for some of the slides used in this course!

Course Information

- **CENG2400 Embedded System Design**

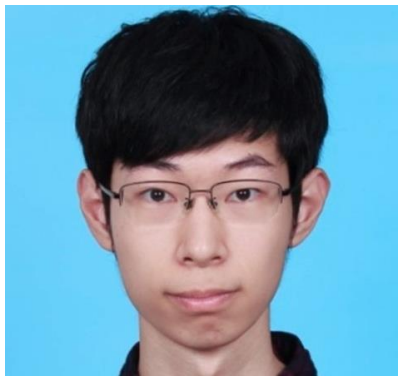
- Course Time and Place
  - **Lecture (*2)**
    - MON 14:30~16:15 (@ LSK 208)
  - **Lab (*1)**
    - TUE 15:30~16:15 (*17:30) (@ SHB 102)

- Course Website
  - https://blackboard.cuhk.edu.hk/

Instructor & Teaching Assistants

- Prof. Ming-Chang YANG (楊明昌)
  - Office: SHB 906
  - Office Hour: TUE 13:30~15:30, or by appointment

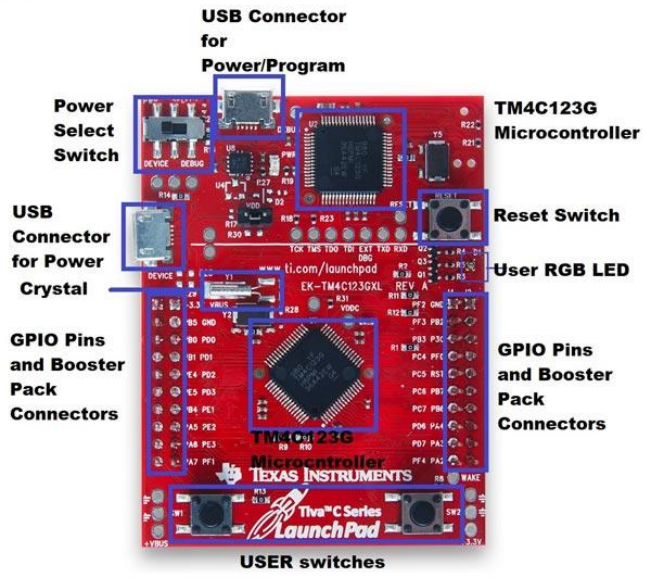
- Chenchen ZHAO (趙晨辰) @SHB 1013
- Kezhi LI (李柯志) @SHB 1013
- Han ZHAO (趙涵) @SHB 921
- Zhirui ZHANG (張知睿) (**UG Helper**)



Course Description

- We will learn:
  - ① What **embedded systems** are
  - ② Embedded **hardware** architecture
  - ③ Embedded **software** development
  - ④ **Interfacing** and **communications**

- We will have intensive practices using **Tiva™ LaunchPad** through:
  - Six weeks of **lab exercises**
  - A four-week **final project developement**



Course Schedule (*subject to changes*)

W	Date	Lecture (MON)	Lab & Final Project (TUE)
1	Sep 2, **3**	Lec00 Course Information & Lec01 Introduction	**No Lab in the First Week**
2	Sep 9, 10	Lec02 General Purpose I/O Peripheral	Lab01 CCS Installation and Debug
3	Sep 16, 17	Lec03 Software Concurrency Basics	Lab02 Initialization and GPIO
4	Sep 23, 24	Lec04 ARM Processor	Lab03 Timer and Interrupts
5	Sep 30, **Oct 1**	Lec05 Serial Communications (I)	**Public Holiday (Oct 1)**
6	Oct 7, 8	**Midterm Exam**	**No Lab in this Week**
7	Oct 14, 15	Lec06 Serial Communications (II)	Lab04 Keypad and LCD
8	Oct 21, 22	Lec07 Analog Interfacing	Lab05 UART
9	Oct 28, 29	Lec08 Motor and Control	Lab06 Analog-to-Digital Converter
10	**Nov 4**, 5	**Course Instructor in Conference Travel**	FP01
11	Nov 11, 12	Lec09 TBA	FP02
12	Nov 18, 19	Lec10 TBA	FP03
13	Nov 25, 26	**Final Exam**	FP04
M	**TBD**	**On-Site Final Project Demo and Competition**	

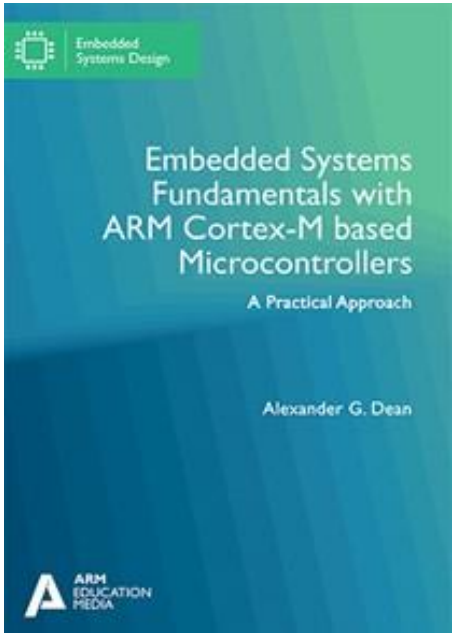
Course Assessment (*subject to changes*)

- Grading Scheme
  - Class Participation **5%** (via **uReply**)
  - Assignments **10%**
  - Labs **15%**
  - Final Project **25%**
  - Midterm Exam **20%**
  - Final Exam **25%**

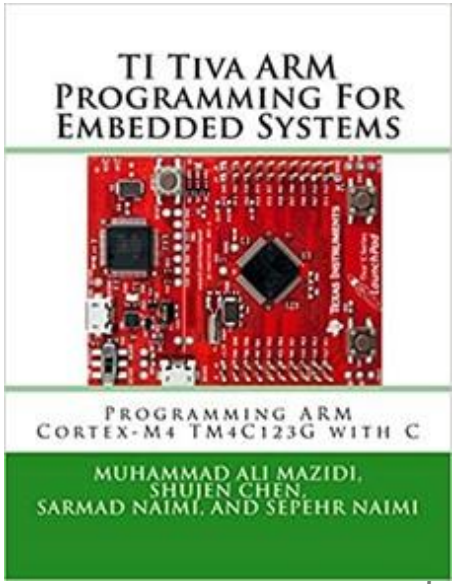
- Notes
  - Late submissions will **NOT** be accepted.
  - Must gain at least **40%** of the full marks in every part to pass the course.

Textbook and References

- **Embedded Systems Fundamentals with ARM Cortex-M based Microcontrollers: A Practical Approach**
  - Alexander G. Dean
  - First Edition



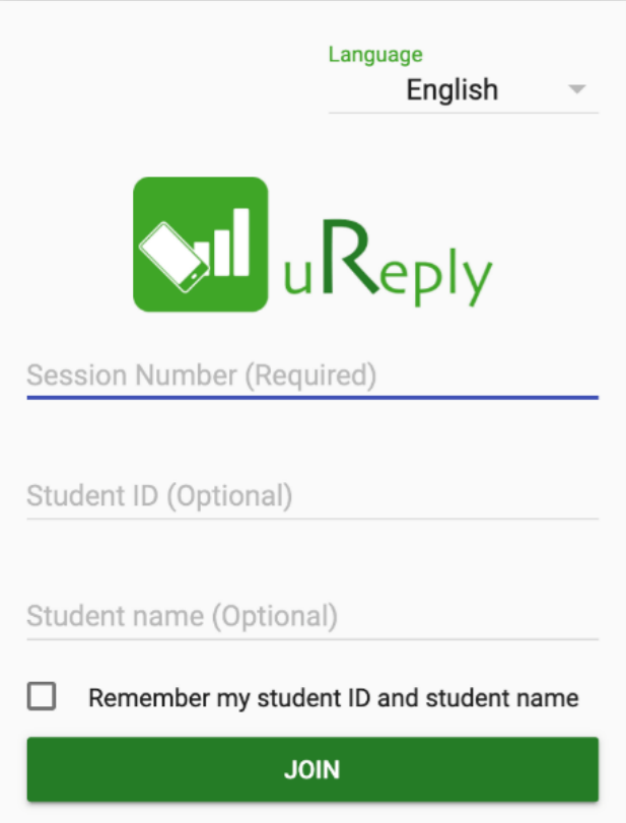
- **TI Tiva ARM Programming for Embedded Systems**
  - Muhammad Ali Mazidi et al.



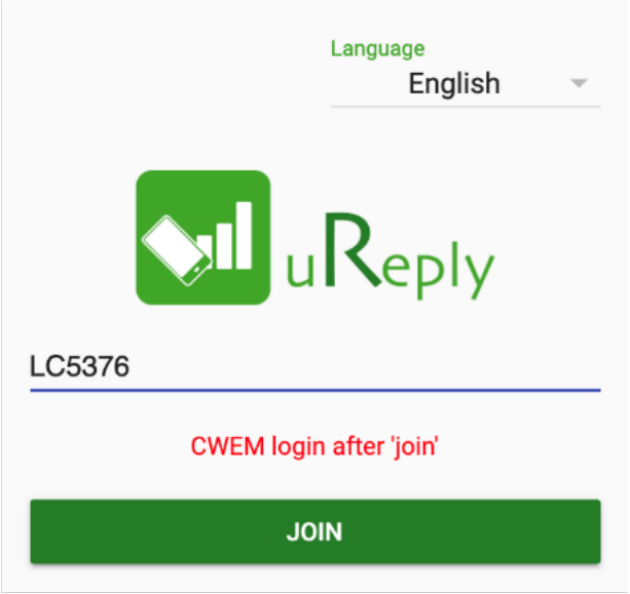
Interactive Participation via uReply

1) Visit uReply & Enter Session Num.

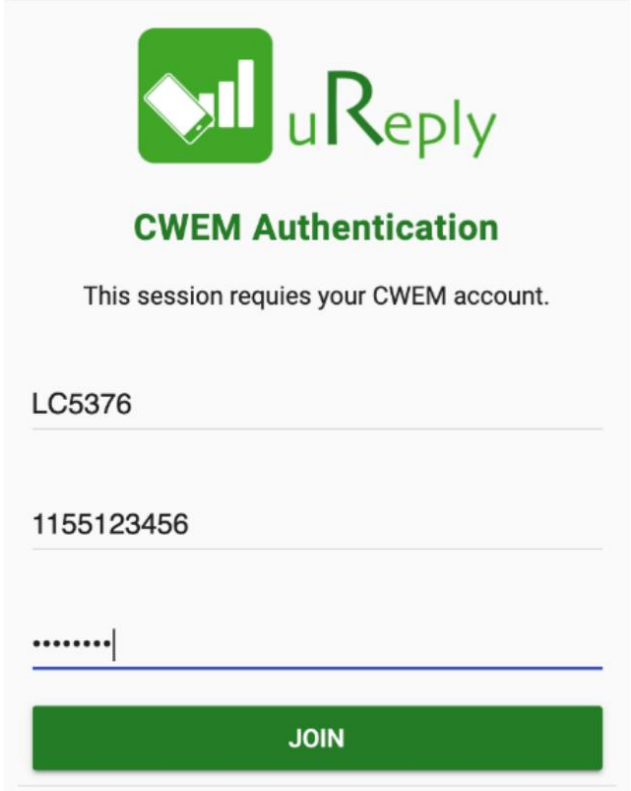
http://ureply.mobi



2) Confirm the Session Number and Click "JOIN"



3) "JOIN" with Student ID and CWEM Password



uReply Attendance User Guide

Important Notes

- **Plagiarism** will **NOT** be tolerated!
  - Do **NOT** copy!
  - Do **NOT** let other(s) copy!
  - **Can** discuss but write up the solutions by yourself!

- All use of AI tools is prohibited (**Approach 1**).

- **Honesty** in Academic Work: A Guide
  - http://www.cuhk.edu.hk/policy/academichonesty/

The best way to learn is through PRACTICE