

組合語言

Assembly Language

資訊工程系四日一C

課號 2351

Instructor：洪士程

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Room:理工大樓E317.4

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Course Time & Office Hours

Course Time

 Friday 2,3,4 (9:10 - 12:00)

 Classroom: E-519

Office Hours

 Wednesday 9:00-12:00

Credits

 Required or Elective

Required (必修)

 Credits

3 Credits (三學分)

Goal

- 📄 Understand the architecture of 8051.
- 📄 Learning 8051 programming.
- 📄 Prepare for the 8051 laboratory.

8051 is a microcontroller.

- 1981, Intel MCS-51

Microcontroller:

- A smaller computer
- On-chip RAM, ROM, I/O ports...
- Single-purpose

Some Products Using 8051 (1/2)

Security systems

- Sensor, motion detector , power detector, smoke detector
- Audio alarm, user authentication



 W. ehold Appliances

 Ref: <http://www.maxim-ic.com/solutions>

Some Products Using 8051 (2/2)

MP3 player

- standalone hard-wired MPEGI/II Layer-3 decoder with C51 microcontroller core handling dataflow control and MP3-player control.

Smart card reader

USB controller



Ref: <http://www.atmel.com/products/MP3/>

Text Book

 The 8051 Microcontroller and Embedded Systems, Using Assembly and C.

- Muhammad Ali Mazidi
- Janice Gillispie Mazidi
- Rolin D. McKinlay

Reference Books





Reference:

- Kenneth J. Ayala, *The 8051 Microcontroller*, 3rd edition, THOMSON, 2005.

Schedule of Progress (1/3)

- 📄 Introduction to computing (week 1,2)
- 📄 The 8051 micro-controllers (week 2)
- 📄 Assembly language programming (weeks 3,4)
- 📄 Jump, loop, and call instructions (week 5,6)
- 📄 I/O port programming (weeks 7,8)
- 📄 Midterm (week 9)
- 📄 8051 addressing modes (weeks 10,11)

Schedule of Progress (2/3)

-  Arithmetic & logic instructions and programs (week 12)
-  8051 Hardware Connection and Intel HEX file (week 12)
-  8051 Timer programming in Assembly (weeks 13)
-  8051 serial port programming in Assembly (week 14)

Schedule of Progress (3/3)

- 📄 Interrupts programming in Assembly (week 15)
- 📄 Timer programming (week 16)
- 📄 LCD and keyboard interfacing (week 17)
- 📄 Project & Report (week 17)





Resources

 Text Book

 Handout

[http://admin.cyut.edu.tw/crsinfo/
8051-CH0.pdf](http://admin.cyut.edu.tw/crsinfo/8051-CH0.pdf) ~ [8051-CH11.pdf](http://admin.cyut.edu.tw/crsinfo/8051-CH11.pdf)

Evaluation

-  Homework (30%)
-  Participation (10%)
-  Mid exam (30%)
-  Project & Report (30%)

學習方式要有技巧

- 📄 學著去適應英文課本、英文教學、投影片教學。
- 📄 投影片只是重點提示，課本一定要精讀。
 - 來不及抄筆記就請先預習。
 - 找別人共同討論。
- 📄 課程內容很多，課本一定上不完。
 - 不可能慢慢教或補課
 - 自己回家唸書是在建立將來自我學習能力

態度決定一切

📄 上課遲到、睡覺、看別科的書、跟不上進度發呆？

— 跟不上進度就不要怪別人了！

📄 是否有心學習

— 預習、複習、作業自己寫

— 每一科、每星期至少花4小時以上唸書

— 有問題上課發問、下課找老師詢問或反應

Made in Taiwan → Made by Taiwan

Production		2006	2007
Notebook	Made by Taiwan	67%	72%
	Made in Taiwan	21%	9%
Ethernet Switch	Made by Taiwan	43%	38%
	Made in Taiwan	26%	16%
CD/DVD Disc	Made by Taiwan	69%	61%
	Made in Taiwan	67%	50%
Cell Phone	Made by Taiwan	9%	8%
	Made in Taiwan	6%	5%
WLAN	Made by Taiwan	91%	95%
	Made in Taiwan	78%	53%
Cable Modem	Made by Taiwan	53%	53%
	Made in Taiwan	41%	26%

重點技術

📄 2010年日本預測之重點科技:

- 地球科學與環境技術, 資訊科技, 生命科學技術, 社會基礎建設技術, 材料技術, 製造與管理