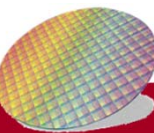




成功大學

National Cheng Kung University

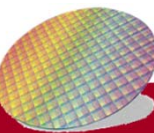
Computer Organization





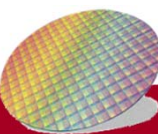
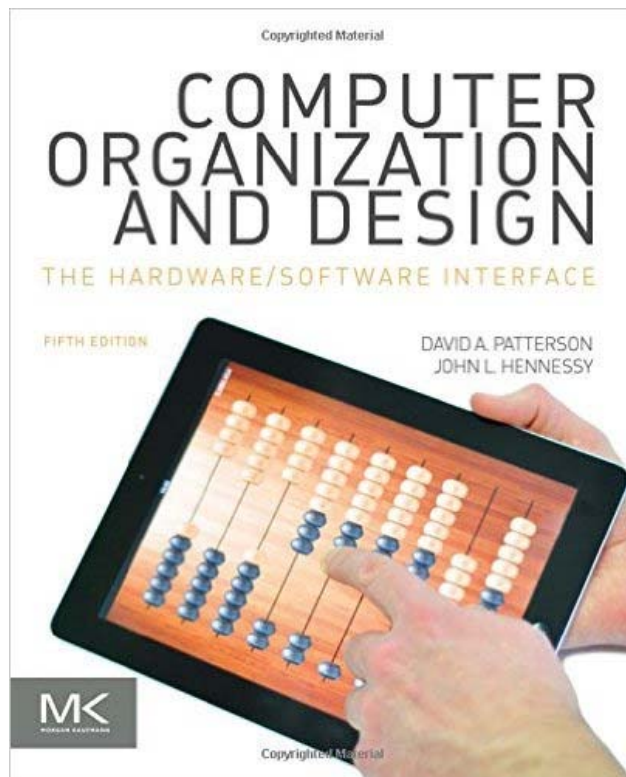
Course Administration

- Instructor: Ing-Chao Lin (林英超)
 - email: iclin@mail.ncku.edu.tw
 - Tel: +8866-2757575 ext. 62553
- Teaching Assistant: TBD
 - Lab:
 - Phone: 06-2757575 ext. 62530-1002
 - Email: nckuco@gmail.com
- Course Website:
 - <http://moodle.ncku.edu.tw>
 - announces and slides will be posted here
 - submit your homework there



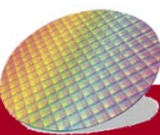
Textbook

- Textbook
 - Computer Organization and Design: The Hardware/Software Interface, fifth ed. by David Patterson and John Hennessy



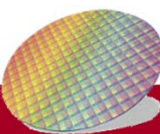
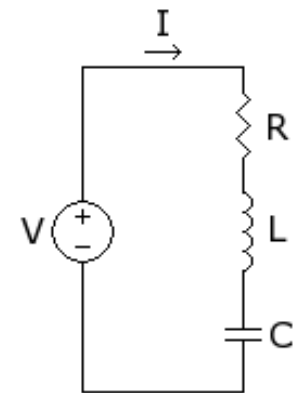
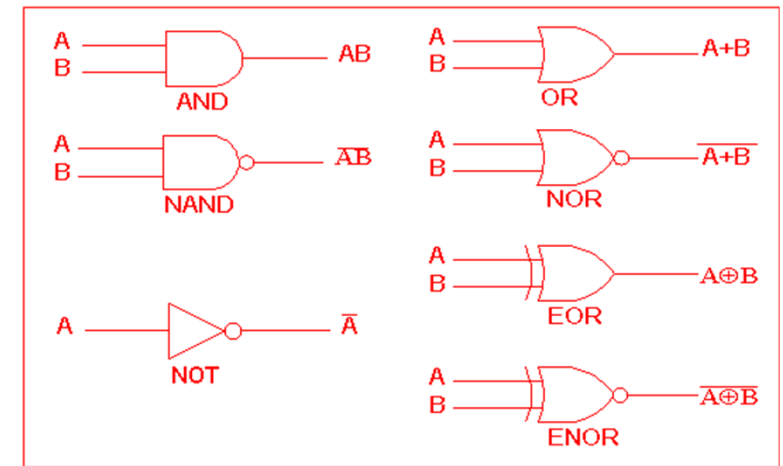
Topics Covered

- Verilog
- Computer Abstraction and Technology
 - Components of computers
 - Performance
 - Power
- Instructions
 - MIPS instruction format
- Arithmetic for Computers
 - Addition/Subtraction
 - Multiplication/ Floating point
- The Processor
 - Data path /pipeline
- Memory Hierarchy
 - Cache basics/ Virtual memory
- Parallel Processors from Client to Cloud



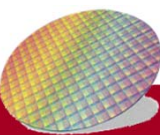
Prerequisite

- Introduction to Circuits Theory and Digital Electronics (F720401)
 - Basic Circuit Theory
 - Frequency response and Bode plot
 - Semiconductor and Transistors
 - Transistor Circuitry and Amplifier
 - Logic Circuits
- Introduction to Digital System (F720900)
 - Logic Gates and Gate-Level Minimization
 - Combinational Logic and Synchronous Sequential Logic
- Programming Language: C/C++ and Verilog



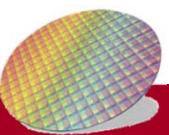
Tentative Grading

- Homework and Lab Assignment (35 %)
- 3 Exams (45%)
- Class Participation (Attendance and In-class quick test, 20%)
 - You need to sign the attendance sheet in each class
 - If someone else sign for you, you will lose 5 points of your final grade for each violation.
 - Honesty is the best policy.
- Percentage of each part may change



Homework and Lab Assignment

- **Homework** and **Lab** Assignment
 - Additional lab hour (You will lose your grade points if you don't attend the lab)
 - No late submission without justified reasons
 - Grading for each homework
 - **Code, Report**: You need to carefully explain your codes and results in your results. If your explanation is unclear. If you cannot explain your code clearly, you will lose points
 - **Honesty is the best policy**. If you copy your homework from someone, **both** will get **0** points for your homework. In addition, both will lose **10** points of your **final grade** for each violation.

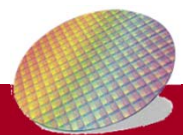




國立成功大學學則

- 第九條 學生因請假而缺課者，稱為缺席，無故缺席者稱為曠課。學生請假辦法另定之。
- 第十條 學生曠課一小時，扣所缺科目學業成績分數一分，請假缺席三小時，扣所缺科目學業成績分數一分。因公請假，或因病請假而經醫生診斷出具證明書，或因懷孕、生產、哺育三歲以下幼兒而核准之事（病）假、產假，其缺席不扣分。
- More rules
 - 國立成功大學試場規則
 - 國立成功大學學生缺席、曠課扣分、扣考辦法
 - 國立成功大學教室使用守則

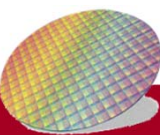
<http://cid.acad.ncku.edu.tw/files/11-1056-603.php>



Laptop & Tablet issue

- It's OK if you use your **laptop** or **tablet** or **phone** for class-related issues, such as reading course slides.
- However, It's not allowed to use laptop or tablet for things that **are not related to class**.
- I want everyone to be here and present

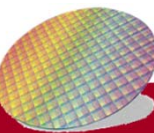
You will lose **2** points of your **final** grade for each violation.





In-class quick test

- In-class quick test is a very simple test.
- Normally take less than 30 minutes.
- Cover what I taught in class
- Basically, it is random, and will not be announced in advance



Homework 0 (1% of your final grade)

- Prepare a PowerPoint slide and put your head shot picture (大頭照).
- Submit on Moodle by 3/7 (Wed) 11:55PM.
- Mail to nckuco@gmail.com if the course is not in your moodle.
- See another file for the example

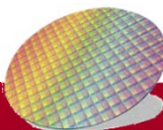
HW 1

- 計算機組織學生資料



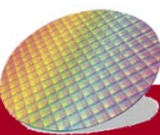
姓名: 林英超
年級: 大學部 or 研究所
班別: 甲 or 乙
學號: F741234567

Minimal original picture size: 300x 450 pixels
Picture must be taken within one year.
Mail to: nckuideallab@gmail.com by
3/2 (Monday) 11:50PM



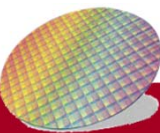
Reading Assignment

- Watch Verilog Video
- [Review Verilog HDL \(Chapter 10\)](#)
 - [HDL part 1 to part 7](#)
- https://www.youtube.com/watch?v=HtFcf7cWidk&list=PLcDMxMrIFAkHC_ZpTRhN_6QZctPnMBoxP



Thank you for your listening!

Any Questions?





成功大學

National Cheng Kung University

Backup Slides

