Course logistics

- Course website: https://wangc86.github.io/csu0007/
  - Homework submission: via NTNU Moodle (https://moodle.ntnu.edu.tw/)
- Course meetings: Mondays 9:10-12:10 in C007, Gongguan Campus
- Instructor: 王超
  - Email: cw@ntnu.edu.tw
  - Office: Room 511, Applied Science Building, Gongguan Campus
  - Office hours: Tuesdays and Wednesdays, 9-11am
- Teaching assistant: 余承恩

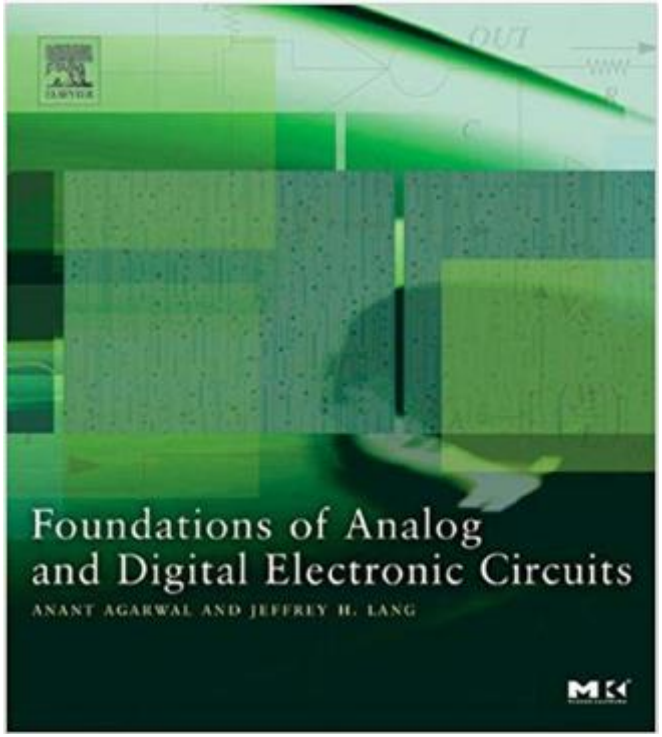
Course objective and organization

- Objective of this course:
  - For freshman students to learn the basics of electronic circuits, as a preparation for advance topics in computer science and engineering discipline
- I will give lectures using “PPTs + blackboard illustration + note”
  - Be ready to take note during the lecture
- Besides lectures, we will have
  1. Reading assignments for detailed coverage of the subject.
  2. Homework assignments for subject review and exercise.

  Both of these are essential for your learning in this course!

Course textbook

- The required textbook:
  - Agarwal, Anant and Lang, Jeffrey H. Foundations of Analog and Digital Electronic Circuits. Morgan Kaufmann; 1 edition (July 18, 2005). ISBN 978-1558607354



Grading policy

- Homework 40% (submit via Moodle https://moodle.ntnu.edu.tw/)
- First exam 25% (on April 20, in class)
- Final exam 25% (on June 15, in class)
- Participation 5%
- Attendance 5%

- No late homework submission and no make-up exam

Academic integrity

本校校訓由第三任劉真校長所訂，於民國41年2月20日第27次行政會議通過。劉校長希望同學們從內心的修養到生活的實踐，都能切切實實地做到這四個字，以樹立良好的學風，進一步達到改造社會的目的。

誠 不虛偽、不欺妄。
凡事能做到始終如一、擇善固執。

正 不偏私、不枉曲。
凡事能做到光明正大，貞固剛毅。

勤 不怠惰、不因循。
凡事能做到自強不息、鍥而不捨。

樸 不奢糜、不浮華。
凡事能做到質樸無華，闇然尚絅。

- Sincerity
- Integrity
- Diligence
- Simplicity

http://archives.lib.ntnu.edu.tw/c2/c2_1.jsp

CSU0007: Basic Electronics

Lecture 01: The Circuit Abstraction

(Reading assignment: Sections 1.1-1.6; 1.8)

Instructor: Chao Wang 王超

Department of Computer Science and Information Engineering

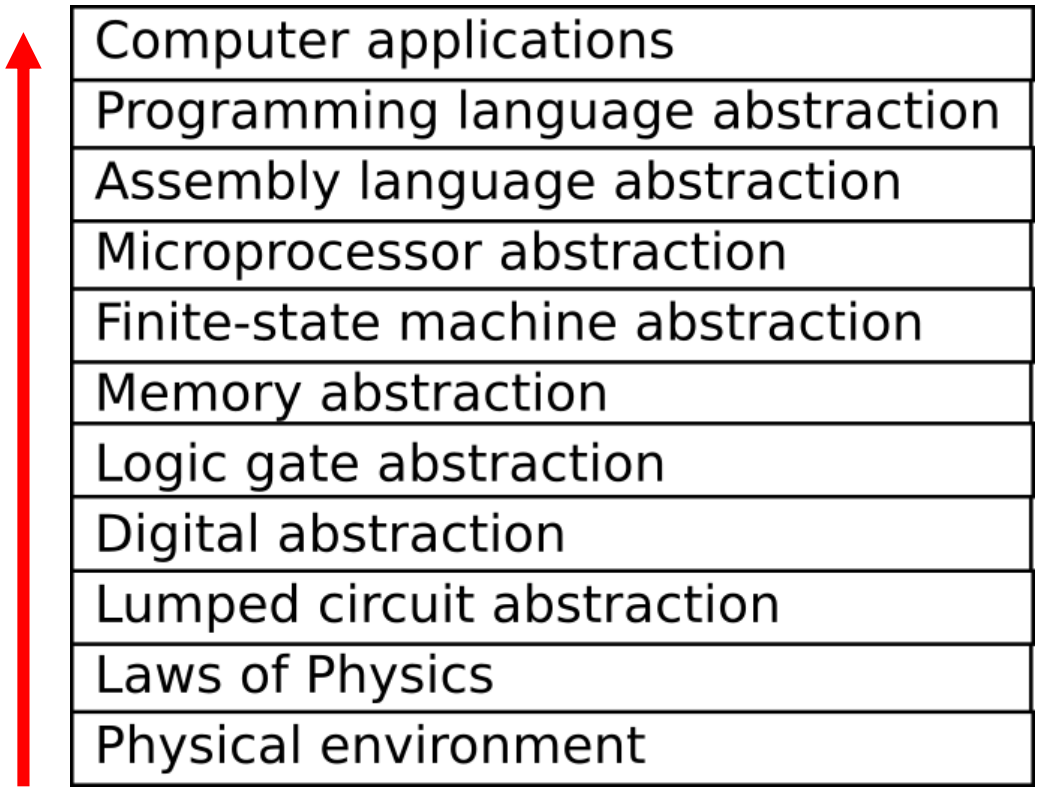
NATIONAL TAIWAN NORMAL UNIVERSITY

From science to engineering

- “Engineering is the purposeful use of science.” - Steve Senturia

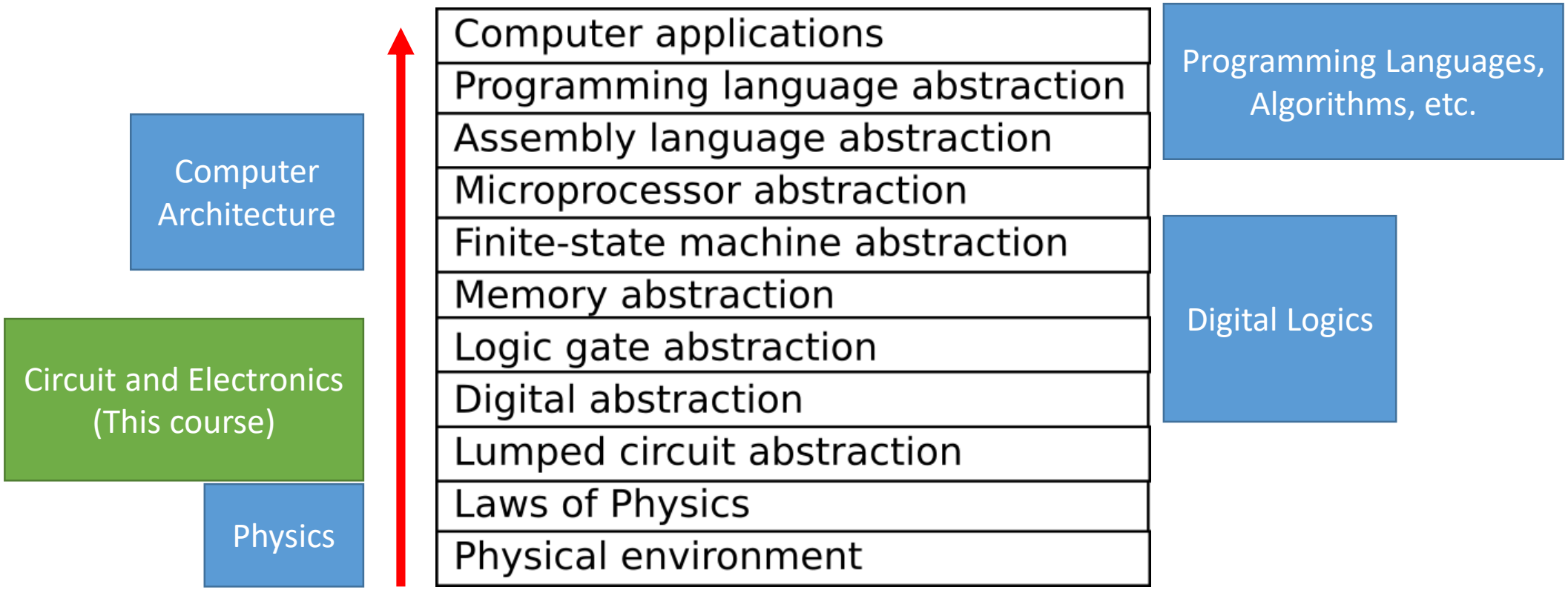
- Abstraction: a way to hide details unnecessary for applications, provided that certain constraints are met
  - Example: Newton’s laws of motion ***F = ma***
    - ✓ Applicable only when _____

Layers of abstraction in computer engineering



Layers of abstraction in computer engineering

… and a landscape of courses in Computer Science and Information Engineering



The circuit abstractions

- Agenda of today's lecture
  - The lumped matter discipline (LMD)
  - Practical two-terminal elements
    - Batteries and linear resistors
  - Associated variable convention
  - Ideal two-terminal elements
    - Voltage sources, wires, resistors, and current sources

➢ Now let's turn to the blackboard

Summary of lecture 01

- Course logistics
  - Visit the course website for the latest information

- The circuit abstraction
  - The lumped matter discipline and its limitation
  - Basic two-terminal elements

The QR code for the course website