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2. 處理器設計與實作 LABs Handouts

Web page: http://caslab.ee.ncku.edu.tw
Class Format

- Review
- Lecture
- Administrative Matters
- Lecture/Discussion
- Labs: Lab exercises for CPU and System Design
- *Discussion based on your questions*
Grading

- 40% LABs: Lab exercises for CPU and System Designs
- 60% Examinations (3 Quizzes)
Class outline

• Introduction
  – Computer abstractions and technology
• Performance
• Instructions
  – MIPS instruction set
  – ARM instructions set
• Arithmetic for computer
  – + - X /, and FP unit
• Processor design
  – data-path and control
  – Single cycle and multiple cycle implementation
• Pipeline
  – Pipeline data path and control
• Memory Hierarchy
  – Cache memory, virtual memory
• Storage, I/O
  – I/O bus, program interface, DMA

• Multi-cores and multiprocessors

• LABs: 處理器設計與實作