Digital Electronics

XMUT-ECEN 202 - 2025 T1

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What's the course about?

At the completion of the course, students should be able to:

- Design both combinatorial and sequential digital circuits.
- Be able to practically implement these designs by the construction and testing of prototype circuits.
- Understand the basic architecture of a microcontroller by using the 8051 microcontroller as an example.
- Be able to program a microcontroller in assembly language and to interface it in a real-world application.

Where we are headed?

- ECEN 202 is just the start.
- The ability to program devices is crucial to rapidly iterate electronics design.
- Hardware by the programming of digital logic! EEEN (ECEN) 402
- Software by the programming of microcontrollers! EEEN (ECEN) 301

Admin: People

- Coordinator and Lecturer: Felix Yan
  felix.yan@vuw.ac.nz
- Lecturer: TBD
- Co-teacher: Dr Huali Jiang (XMUT)
  Dr Qilong Wu (XMUT)
- Tutors: XMUT and VUW
- Course URL: https://ecs.wgtn.ac.nz/Courses/XMUT202_2025T1/

Lectures

- Mondays, Wednesdays
- Slides
  - on course webpage (pdf for each week)
- Video recordings
- Questions:
  - WeChat, or
  - Emails
- Goals
  - Provide a framework for your learning
  - Provide key content/explanations/demonstrations

Assessment

- Attendance [10%]
- Assignments [10%]
- Labs [20%]
- Test [30%] lecture time
- Final Exam [30%] 2 hours, in exam period

Mandatory Requirements

- 1 day after the deadline will receive a maximum mark of 90%,
- 2 days after the deadline will receive a maximum mark of 80%,
- 3 days after the deadline will receive a maximum mark of 70%,
- 4 days after the deadline will receive a maximum mark of 60%.
- 5 days after the deadline will receive a maximum mark of 50%.
- **No work will be accepted after releasing the solutions unless previously arranged with the course organizer.**

Labs and Assignments

- Critical for your learning!
  - Labs and Assignments ⇨ total of 30%
- Labs are in groups, and you must present your projects to co-teachers or tutors in the lab.
- Assignments must be your work.
- First Lab: starts next week

Getting Help.

Co-teacher and Lecturer

- Ask questions and answers (During lectures or labs, emails and WeChat)
- **NO** posting chunks of **ANSWERS** to assignments!

Text Book (optional)

- *Digital Systems Principles and Applications*
  by R J Tocci
  - 12th edition is best

- Electronics A Systems Approach
  by Storey

PLAGIARISM UNACCEPTABLE

- We want you to LEARN, TALK to each other, learn TOGETHER, and HELP each other, but

PLAGIARISM is UNACCEPTABLE!

- Got help from anybody other than lecturer or tutor?

STATE IT ON THE ASSIGNMENT!

- Copied bits of code from anywhere other than lecture slides or textbook?

STATE IT ON THE ASSIGNMENT!