
Systems Programming

XMUT-NWEN 241 – 2024 T2

Introduction

Mohammad Nekooei

School of Engineering and Computer Science

Victoria University of Wellington

The NWEN 241 Team

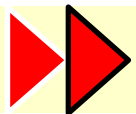
- Lecturer (part 1) Mohammad Nekooei
mohammad.nekooei@ecs.vuw.ac.nz
- Lecturer (part 2) Lecturer from VUW
- Co-teacher
- Tutors Range of PhD students
- Students You and the people around you
- Course URL: https://ecs.wgtn.ac.nz/Courses/XMUT241_2024T2
- WeChat group

What's the course about?

- Use appropriate tools for compiling/debugging C programs.
- Write C programs using pointers and arrays, user-defined data types, input/output operations, and user-defined and library routines.
- Use or understand the main techniques of dynamic memory management in C.
- Structure larger programs in multiple files.
- Understand the differences between application software and system software.

Background needed for NWEN 241

- This course assumes that you are familiar or have taken courses that have dealt with the following topics:
 - Binary representation of numbers
 - Basic logic or Boolean algebra
 - Computer program design
 - Java programming
- Computer program design and Java programming are essentially covered in COMP 102 and COMP 103
- If you want to brush up on your knowledge of binary representation and basic logic:
<https://www.bottomupcs.com/chapter01.xhtml>



Revise these concepts if necessary!

Observations about Engineering Courses

There is no gender divide. Female/male/other do just as well in this subject overall.

- Many were uncomfortable about asking questions:
 - in lectures, in labs and on WeChatbecause other students put them down

Putting people down for asking questions or for trying to learn is

- unprofessional
- obnoxious
- unacceptable
- not what the university is about

Lectures

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

See Course Wiki for more details about
Lecture Schedule

Labs

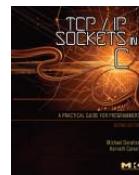
- Lab: Systems
- PC workstations
 - Windows system
 - Compilers & debuggers: gcc, g++, gdb, and more
 - Text editors: kate, gedit, emacs, vi, vim, and more
 - IDE: Code::Blocks
 - Cygwin
- Text editor vs IDE: IDE

Books and Other Resources (1/2)

- No textbook required
- Good references:



Perry, Gregory, **C Programming Absolute Beginner's Guide**, Third Edition



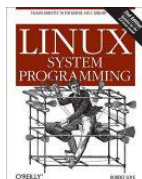
Donahoo, Michael, **TCP/IP Sockets in C**, 2nd Edition



Kochan, Stephen, **Programming in C**, Fourth Edition



Malik D.S., **C++ Programming: Program Design Including Data Structures**



Love, Robert, **Linux System Programming**, 2nd Edition

Books and Other Resources (2/2)

- Classic C programming reference:



Kernighan and Ritchie, **The C Programming Language**, 2nd Edition

- Lecture slides:
 - To be released a day before lecture in [course website](#)
 - https://ecs.wgtn.ac.nz/Courses/XMUT241_2024T2/LectureSchedule

Assessment

Item	Weight
Attendance	10%
Assignments – 4 in total	24%
Exercises – 3 in total	6%
Tests – 2 in total	20%
Final Exam	40%

- **Note** that if you fail the course the first time, and need to take the make-up exam, the **make-up exam will only replace your tests and exam marks**
 - Your final grade will be 60% from your attendance, assignments and exercises, and 50% from the make-up exam.

Assignments

- Critical for your learning!
 - 4 Assignments → total of 24% (will be marked by tutors in VUW)
 - 3 Exercise → total of 6% (will be marked automatically)
 - 2 weeks each
 - out: Monday (09:00) due: Saturday (19:00)

 - Late assignments cannot be marked.
- Must be individual work.
 - We will talk about how to collaborate and help each other without plagiarism
- Programming Style will be a component of the marks (up to 15% off for bad style)

Penalties for late submission

- Work submitted:
 - 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 organiser.

Getting Help.

Co-teacher and Lecturer

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

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?

STATE IT ON THE ASSIGNMENT!

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

STATE IT ON THE ASSIGNMENT!

Cheating in the assignments.

Assignments are primarily for learning

Cheating in the assignments is not worth it!

- You won't learn, so you will probably fail.
- If caught, you'll lose marks --- or worse.
 - Do not lend your work to others
 - Do not ask other students for their answers – it is stealing their marks.
- Ask for help
 - Lecturer, co-teacher and the School of International Education

Tests and Final Exam

- 2 Tests → total of 20%
- Final Exam → total of 40%
- If you get a higher mark in the exam than you did in tests, then we will increase your mark for the test up to your exam mark.
- Please check the course webpage regularly:
https://ecs.wgtn.ac.nz/Courses/XMUT241_2024T2