Computer Science Practice and Experience: Development Basics

COMPSCI 1XC3 - C01, C03

Course Content

Main Topics

- Unix/Linux Command Line

- Version Control

- C Programming Language

Topic 1 - Unix/Linux Command Line

- Directory Navigation

- Manipulating Files

- Redirection

- Process Management

- Permission & System Information

- Environment

- Archiving & Compression

- Searching for Files

- Regular Expression

- Text Processing

Topic 2 - Version Control

- What is Git

- Git Basic Commands
  - Initialize Repositories
  - Track Files
  - View Changes
  - Undo Changes
  - Commit Changes
  - Working with Remotes

- GitHub

Topic 3 - C Programming Language

- Types, Operators and Expressions

- Control Flow

- Functions & Program Structure

- Memory

- Pointers & Arrays

- Struct

- Input Output

- Data Structures

- Building, Testing, Debugging

Learning Objectives

By the end of the course, students will be able to:

1. use unix/linux command lines to perform basic tasks such as directory navigation, file operation, process management, system Information, compression & archiving, regular expression and etc.;

2. using Git commands and GitHub for project management;

3. understand the C programming language, from fundamental data type to advanced structure and memory allocation;

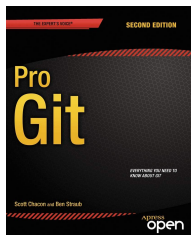4. write, organize, build and debug C projects.

Books
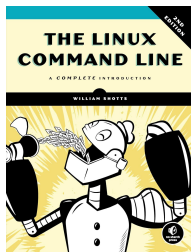
Book Name: The Linux Command Line: A Complete Introduction (2nd Edition)
ISBN: 978-1593279523
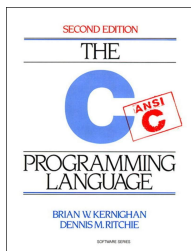Authors: William Shotts
Publisher: No Starch Press, Inc.

Book Name: Pro Git
ISBN: 978-1484200773
Authors: Scott Chacon and Ben Straub
Publisher: Apress

Book Name: The C Programming Language
ISBN: 978-0131103627
Authors: Dennis Ritchie and Brian Kernighan
Publisher: Pearson

No Mandatory Textbooks

Lectures & Labs

Lectures

Delivery:

- Tuesday, Friday, 9:30~10:20 AM
- In-person @ ITB 137, streaming in Teams course channel

Activity:

- Lectures cover textbook knowledge, and commands & code examples
- You are welcome to bring your own laptop to experiment the lecture examples.

Material

- Lecture notes will be released for after-class practice.

Labs

Time & Location:
- L01 Tuesday, Thursday, 12:30PM - 2:20PM @ ETB 118 - Tony
- L02 Tuesday, Thursday, 10:30AM - 12:20PM @ ETB 118 - Nicole
- L03 Tuesday, Thursday, 10:30AM - 12:20PM @ JHE 233A - Divij
- L04 Monday, Wednesday, 12:30PM - 2:20PM @ ETB 118 - Christian

Activity:
- Dedicated time for you to experiment and understand lecture examples, will be checked off by TAs
- Hosting TAs have the flexibility to add more course-relevant topics
- Reach out if you need accommodation for participation

Material:
- Command & code examples provided in the lecture notes
- Lab slides or notes provided by TAs.

Assessment

Overall Composition

Assignments: 25%

Midterm-exam: 25%

Final Exam: 35%

Practice & Participation: 15%

Assignments

- **Four Assignments 25%**
  Breakdown: A1 - 5%, A2 - 6%, A3 - 7%, A4 - 7%
  Similarity may require oral explanation

- **Late Policy**
  Late work will NOT be accepted without MSAF or SAS.
  Requesting MSAF will receive extended days for completion. No credit transfer.

- **Regrade**
  Submit a regrade request to the grading TAs within one week of time of the initial grade release.
  Further disagreement can be resolved by contacting the instructor within one week of the regrade.

Exams

- Midterm-exam: 25%

  Closed-book exam in pen & paper form, cheat-sheet allowed

  Initial date: *March 3rd*, in-class, 50 minutes

  Same regrade policy as for the assignments

- Final Exam: 35%

  Cumulative, 2hr long

  Closed-book, pen & paper form, cheat-sheet allowed

  Registrar invigilated

Practice & Participation

- ## Practice 10%

  In lab: experiment the command or code examples in the lecture notes

  Checked off by TAs per lab

- ## Participation 5%

  Reserved for lecture participation, popup quizzes, or lab activity, etc.

  Please prioritize hands-on practice.

Support

Support

- Email

  Title with [1XC3 2026] as prefix, send to wang840 at mcmaster dot ca

- Office Hour

  Friday 10:30 AM ~ 12:00 PM @ ITB 130 drop in, or by appointment

Support - TAs

- ## Graduate TA (Marking)
  Yanbo Cheng - cheny897 at <u>mcmaster.ca</u>
  Office Hours: Tuesday 2:30~4:30pm @ ITB 112

- ## Undergraduate TAs
  Tony Lin - lint50 at <u>mcmaster.ca</u>
  leading lab L01

  Nicole Sorokin - sorokinn at <u>mcmaster.ca</u>
  leading lab L02

  Divij Dhiraaj - dhiraajd at <u>mcmaster.ca</u>
  leading lab L03

  Christian Canlas - canlasc at <u>mcmaster.ca</u>
  leading lab L04

Thank you & Questions?