EECS2031 Software Tools

Winter 2018

Course Website
https://www.eecs.yorku.ca/~papaggel/courses/eecs2031

Course Description
This course provides an introduction to software techniques in a Unix-style environment, using scripting languages and a machine-oriented programming language (typically C). What goes on in the system when programs are executed? Core topics: Unix environment, shell programming, creating and using software tools, pipes and filters, file processing, processes, system calls, signals.

Instructor
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Class Hours
Lectures: Tue, Thu 09:30-10:30am in CLH E (room in Curtis Lecture Hall E)
Tutorial/labs: Tue (Lab01), Wed (Lab02), 13:00-:15:00pm in LAS1006 (room in Lassonde building)

Class Attendance
Attendance of lectures and tutorials/labs is expected but not required.

Prerequisite Courses
LE/EECS 1030 3.00 or LE/EECS 2030 3.00.

Textbooks
- C Programming: A Modern Approach, Second Ed., K.N. King. W. W. Norton and Company, 2008.
- (Optional) Unix System Programming Second Ed., Keith Haviland, Dina Gray, Ben Salama. Addison-Wesley, 1998.
- (Optional) The Linux Programming Interface, Michael Kerrisk, No Starch Press, 2010.

Communication
The main communication tool for the class will be the course web site and a discussion board.
- *Website and Discussion Board*: Most class materials are available on the course web site; be sure to check regularly. Most importantly, the page has a link to a discussion board (we are using Piazza).
- *Piazza*: Instead of a traditional discussion board, we are using Piazza, a free Q&A platform. Piazza can get you fast, accurate response to your questions – but it only works if everyone participates! We will also use Piazza to post announcements and updates, so both the website and the discussion board are required reading. See below for Piazza signup and class links:
  - *Signup link*: https://piazza.com/yorku.ca/winter2018/eecs2031m
  - *Class link*: https://piazza.com/yorku.ca/winter2018/eecs2031m/home
  Note: You will need to sign up with your school email, ending in *yorku.ca*. If you do not have a school email address, please contact your instructor and request to be enrolled with your personal email.
- *Email*: Please use email for personal issues and the discussion board to ask general course-related questions. Include "eecs2031" in all email subject lines. An informative subject line like "eecs2031: Question related to X" really helps. I try to respond to email frequently. However, due to volume, it may take longer, especially near due dates.

Assignments
Students will need to work on three assignments. Details will be provided online and in class.

Final Examination
A written final exam will be given (Exam period is Apr 9-23. Date TBD).

Grading Policy
The course grade will be earned in the following categories: 3 Assignments (45%); Midterm Test (15%); Final Exam (40%)
Note however that your mark in the final exam needs to be at least 40 out of 100 in order to pass the course.

To calculate your final grade in the course consider the following formula:

$$g = 0.45a + 0.15m + 0.4f, \text{ if } f >= 40; g = f \text{ otherwise.}$$

where a = assignments grade, m = midterm test mark, f = final exam mark

Late Work Policies

The late policy is strict. All assignments will be submitted electronically. Assignments are due at 11:59 p.m. on the due date. Late assignments will be handled based on a system of "grace days", as follows: Each student begins the term with 3 *grace days*. One grace day is 24 hours. If an assignment is due at 11:59 p.m. on a Friday then an assignment handed in by 11:59 p.m. on Saturday uses one grace day; if handed in by 11:59 p.m. Sunday, it uses up 2 grace days; if handed in by 11:59 p.m. Monday, it uses up 3 grace days. The grace days are intended for use in emergencies (e.g., system failure or illness). Do not use all of them to buy an extension because of a busy week or you will be out of luck in a true emergency. Assignments submitted after the due date when all grace days have been used will receive a grade of 0.

If you are at risk of missing a deadline due to a busy week, rather than use your grace days you should hand in a working (and tested) version of a simpler program. In the event of an illness or other catastrophe, get proper documentation (e.g., medical certificate), and contact me (by email or in person) as soon as possible. Do not wait until the due date has passed. It is always easier to make alternate arrangements before the due date or test day.

Assignments are submitted electronically and will often be tested using an automated testing program; you must follow the submission instructions exactly. If you do not, you will most likely lose substantial marks on the assignment. If you find you have submitted the wrong file or omitted a file, please notify your instructor as soon as possible.

Remarking

If you feel an error was made in marking an assignment or test please submit a remark request. Requests for remarking must be submitted using a university remarking request form explaining what your concern is **no later than a week** after the assignment (or test) has been returned back.

Academic Offenses

All of the work you submit must be done by you and your work must not be submitted by someone else. Plagiarism is academic fraud and is taken very seriously. The department uses software that compares programs for evidence of similar code. Please read the Rules and Regulations from the York University's Academic Integrity and the York University's Senate Policy on Academic Honesty documents.

Accessibility Needs

York University is committed to accessibility. If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom or course materials, please contact York University's Counselling & Disability Services.

Tentative Schedule

A tentative schedule of topics to be covered appears below. This is subject and likely to change.

Part	Date (Wed)	Lecture Topic	Tutorial
I (~3 Weeks)	Unix environment, Shell Programming	Introduction, UNIX, Shells, Shell Programming	Unix, Shell Scripting, Examples
II (~7 Weeks)	C Programming	C Fundamentals, Input/Output, Expressions, Selection Statements, Loops, Types, Arrays, Functions, Pointers, Arrays, Strings, Structures, Dynamic Memory Management	C Programming, Examples
Part III (~2 Weeks)	Unix Programming	Processes, Signals, Pipes	Processes, Signals, Pipes

Grading Scheme and Assignment Schedule

Component	Weight	Tentative Posting Date	Due Date	Topic
1st Assignment	15%	Fri, Jan 26	Fri, Feb 9, 11:59 pm	Shell Programming
2nd Assignment	15%	Fri, Feb 15	Fri, Mar 2, 11:59 pm	Tools in C
3rd Assignment	15%	Fri, Mar 9	Fri, Mar 23, 11:59 pm	More Tools in C
Midterm Test	15%	-	Thu, Mar 15, 9:30 – 10:30	Shell & C
Final Exam	40%	-	Apr 9-23	All Topics Covered