



Course Syllabus

CP367 Intro to System Programming

Department of Physics and Computer Science, Faculty of Science, Waterloo Campus

Winter | 2019

I acknowledge that in Kitchener, Waterloo, Cambridge and Brantford we are on the traditional territory of the Neutral, Anishnawbe, and Haudenosaunee peoples.

Instructor Information

Name **Erin K.M. Meger** | Office Location **N2091A**

Contact Information **ekmmeger@wlu.ca**

Weekly Office Hours **Monday 11:30-1:30** or By Appointment

Course Information

Calendar Description

Contemporary ideas and techniques in system programming using the C language. Using and implementing software tools: filters, pipelines, sorts, text patterns and others.

Introduction to Unix operating system and Unix commands. Shell programming in Unix.

Pre-requisites: CP264 | Exclusion: CP217

Lecture: MWF 10:30-11:20 Science N1044

Labs: M 1:30-2:20 Bricker BA113

Course Overview and Approach

This course will provide students with practical and theoretical knowledge of Unix and how to write programs at the system call level. We will explore the theory of system programming using practical contexts and detailed explanations. Through class lectures, students will be exposed to the theory, and will have an opportunity to work through examples as a class. The lab component of the course will assist students with key skills from each week of lecture.

It is expected that students take detailed notes throughout the lecture, and complete textbook readings in a timely manner. Before asking a question, take a moment to read over your notes, then check the textbook. The answer is likely right in front of your nose!

The best way to learn Unix is by USING IT! It is recommended students dedicate significant time to working through assignment problems, and reviewing any in-class examples.

Class and Laboratory Attendance

From the university's regulations: Any [student](#) who, in the opinion of instructors, is absent too frequently from lectures or laboratory periods will be reported to the dean of the [faculty](#). On the recommendation of the [department](#) concerned, such a student after due warning by the dean shall be **debarred from taking the final examination** in that [course](#). Lecture attendance rolls will occasionally be taken.

Course Tools and Learning Materials

List here all course tools, learning materials, and supports associated with the course.

- **Required Textbook:** *Understanding Unix/Linux Programming, A guide to theory and practice.* Bruce Molay. Prentice Hall
- Available in the bookstore.
- Other resources will be posted on MLS as required.
- Brightspace - Laurier's MyLearningSpace [course login page](#)
- Student success departments - writing centre, math centre, academic advising, study skills/supplemental instruction, accessible learning)

Student Evaluation

Assessment	Weighting
Midterm	30%
Assignments (7-10)	20%
Lab Tasks	10%
Final Exam	40%
Total	100%

Learning Activities, Assignments, Tests, Quizzes and Examinations

Details on testable topics will be posted well in advance of the midterm and the final. Each test will include both multiple choice (ScanTron) questions and written coding questions. Please be prepared to hand-write your code with proper syntax.

Lab Activities will vary by week. They may include (but are not limited to) small quizzes, or small coding exercises.

Assignment Policy:

- Assignments must be submitted at *mylearningspace*.
- Assignments will be posted at least one week before the due date.

- Programs should be written in the style described in the class note on C Programming style.
- Programs are marked on correctness and style, including internal documentation.
- Programs should be user-friendly and should not crash on bad input. Programs should warn user on bad input.
- If your assignment does not compile on hopper, it will not be marked and given credit.
- The markers should be able to run your assignment without making any change to it.

How to name the assignment projects: suppose your name is Shoemaker and your program solves question 3 of assignment 6, then the program should be named

`shoe_a6_q3.c`

that is, the name of a program is

`<author_name>_<assignment_number>_<question_number>.c`

where `<author_name>` is the first four characters of your family name and the two fields `<assignment_number>` and `<question_number>` are obvious.

If an assignment has only one question, then `<question_number>` should be omitted. For example, if assignment 7 has only one question, then the program is named `shoe_a7.c`.

If your submission contains more than one program (the assignment consists of more than one question), they should be put in a zip file named by the above convention. For example, the assignment 7 submission of Shoemaker is named `shoe_a7.zip`. Submit this zip file.

This naming convention facilitates the tasks of marking for the course markers and instructor. It also helps you in organizing your course work. Failure to follow the requirements will result in mark reduction.

Note: to zip and unzip files in Unix:

`$zip -r filename.zip files`

`$unzip filename.zip`

Frequently encountered problems with assignment submission

Problem: I completed my assignment, but I did not upload my program by the deadline because my Internet connection was down (or, because ftp did not work, etc.)

Solution: Do not wait to the last hour to submit the assignment. If you are trying to submit the assignment from home, and your Internet goes down, that is your own problem. Try to submit it 3 hours before the deadline.

Problem: I submitted the wrong file.

Solution: You can always download your submission and verify that it contains the right files. This does not take more than three minutes. You may resubmit as many times as you like, the newly submitted file will replace the existing file in WebCT. Note that you have to submit a zip file. If you resubmit your assignment after the deadline, it will be considered late.

Problem: My assignment is strikingly similar to that of another student because we “worked together” on it.

Solution: The assignments are individual. Do not work with another student on them. Do not give your work to another student. The policy is approximately as stated as follows given the discretion of the Dean of Science. If you are charged with plagiarism and it is your first offence, your submitted work will receive a mark of 0, ten final marks will be deducted from your final mark total, a letter will go into your permanent record, and copies will be sent to the Chair of Physics & Computer Science, and the Dean of Faculty of Science. If it is your second offence, then ... you should not even think about it. Since this is a serious matter, and plagiarism occurs frequently, we will make clear of this course’s policy (modelled after that of several North American universities, in particular, Stanford University’s policy).

Please see the Guide to Academic Integrity in Course Content on MLS for more information.

Weekly Lab Schedule (tentative)

Labs begin Monday January 14th.

Winter 2019	
WEEK 2	emacs and gbd
WEEK 3	unix commands
WEEK 4	directory commands
WEEK 5	pointers
WEEK 6	text commands
	Reading Week
WEEK 7	Midterm
WEEK 8	regular expressions
WEEK 9	shell programming
WEEK 10	shell programming
WEEK 11	shell programming

University and Course Policies

Laurier has several senate approved policy statements it requires instructors to include in their syllabus. Those with specific wording approved by senate are indicated specifically below.

1. **Academic Calendars:** Students are encouraged to review the [Academic Calendar](#) for information regarding all important dates, deadlines, and services available on campus.
2. **Special Needs:** Students with disabilities or special needs are advised to contact Laurier's Accessible Learning Centre for information regarding its services and resources.
3. **Plagiarism:** The University has approved the following wording for inclusion on all course syllabi about the use of the institutionally supported plagiarism software tool. "Wilfrid Laurier University uses software that can check for plagiarism. If requested to do so by the instructor, students are required to submit their written work in electronic form and have it checked for plagiarism." (Approved by Senate May 14, 2002) .

In addition to the statement above you may wish to add the following text about academic integrity.

4. **Academic Integrity:** Laurier is committed to a culture of integrity within and beyond the classroom. This culture values trustworthiness (i.e., honesty, integrity, reliability), fairness, caring, respect, responsibility and citizenship. Together, we have a shared responsibility to uphold this culture in our academic and nonacademic behaviour. The University has a defined policy with respect to academic misconduct. As a Laurier student you are responsible for familiarizing yourself with this policy and the accompanying penalty guidelines, some of which may appear on your transcript if there is a finding of misconduct. The relevant policy can be found at Laurier's [academic integrity](#) website along with resources to educate and support you in upholding a culture of integrity. Ignorance is not a defense.
5. **Classroom Use of Electronic Devices:** State your classroom practice and any consequences for student failure to comply - see [Policy 9.3](#) (Approved by Senate March 8, 2012).
6. **Late Assignment Policy:** Specify any penalties that will be assessed when deadlines for the completion of course components are not met (Approved by Senate May 23, 2012). Refer to the Handbook on Undergraduate Course Management for more information.
7. **Final Examinations:** Students are strongly urged not to make any commitments (i.e., vacation) during the examination period. Students are required to be available for

examinations during the examination periods of all terms in which they register. Refer to the Handbook on Undergraduate Course Management for more information.

8. **Foot Patrol, the Wellness Centre, and the Student Food Bank:** The University approved the inclusion of information about select wellness and safety services and supports on campus in the course information provided to students. (Approved by Senate November 28, 2011.) Specific language (by campus) is provided below.

Multi-campus Resource:

- Good2Talk is a postsecondary school helpline that provides free, professional and confidential counselling support for students in Ontario. Call 1-866-925-5454 or through 2-1-1. Available 24-7.

Kitchener/Waterloo Resources:

- [Waterloo Student Food Bank](#): All students are eligible to use this service to ensure they're eating healthy when overwhelmed, stressed or financially strained. Anonymously request a package online 24-7. All dietary restrictions accommodated.
- [Waterloo Foot Patrol](#): 519.886.FOOT (3668). A volunteer operated safe-walk program, available Fall and Winter daily from 6:30 pm to 3 am. Teams of two are assigned to escort students to and from campus by foot or by van.
- [Waterloo Student Wellness Centre](#): 519-884-0710, x3146. The Centre supports the physical, emotional, and mental health needs of students. Located on the 2nd floor of the Student Services Building, booked and same-day appointments are available Mondays and Wednesdays from 8:30 am to 7:30 pm, and Tuesdays, Thursdays and Fridays from 8:30 am to 4:15 pm. Contact the Centre at x3146, wellness@wlu.ca or @LaurierWellness. After hours crisis support available 24/7. Call 1-844-437-3247 (HERE247).

Brantford Resources:

- [Brantford Student Food Bank](#): All students are eligible to use this service to ensure they're eating healthy when overwhelmed, stressed or financially strained. Anonymously request a package online 24-7. All dietary restrictions accommodated.
- [Brantford Foot Patrol](#): 519-751-PTRL (7875). A volunteer operated safe-walk program, available Fall and Winter, Monday through Thursday from 6:30 pm to 1 am; Friday through Sunday 6:30 pm to 11 pm. Teams of two are assigned to escort students to and from campus by foot or by van.

- [Brantford Wellness Centre](#): 519-756-8228, x5803. Students have access to support for all their physical, emotional, and mental health needs at the Wellness Centre. Location: Student Centre, 2nd floor. Hours: 8:30 am to 4:15 pm Monday through Friday. After hours crisis support available 24/7. Call 1-884-437-3247 (HERE247).

