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Overview

The course provides an introduction to fundamental programming principles for first-year Software Engineering students. Topics include procedures and parameter passing, arrays and structures, recursion, sorting, pointers and simple dynamic structures, space and time analysis of designs, and design methodologies. The course will be taught using the C programming language.

Course Outline

Review of fundamental programming concepts and their application. Procedures and parameter passing. Arrays and structures. Recursion. Sorting. Pointers and simple dynamic structures. Space and time analysis of designs. Design methodologies.

Students should be aware that this course contains the intellectual property of their instructor, ISA, and/or the University of Waterloo. Please ensure you read the intellectual property regulations.

Personnel Information

Course Instructor Contact Information

Victoria Sakhnini

Email address: vsakhnin@uwaterloo.ca

Course Instructional Support Assistant Contact Information

Lakshmi Vinoj

Benjamin Chen (part-time)

Helen Chen (part-time)

Email address: cs137@uwaterloo.ca

Course Instructional Assistant Contact Information

Albert Ding

Solomon Davidson Levi

Email address: cs137@uwaterloo.ca

Instructional Support Coordinator Contact Information

Scott King

Email address: sfking@uwaterloo.ca

Scott can be Contacted for questions regarding verification of illness or other documents, course enrolment, alternative arrangements or accommodations, grades, or other administrative questions.

Office hour will be published in the Office Hours file on LEARN and Piazza

Resources

LEARN (All resources, documents, quizzes, and more will be posted only on LEARN)

https://piazza.com/   Check for more info here.

All assignment submissions will be done on Marmoset.

C Resources

The C Reference Manual

The C Standard Library

C reference

Miscellaneous

Academic Integrity Powerpoint

Avoiding Accidentally Deleting Files in Terminal

Installing Bash on Windows 10.1
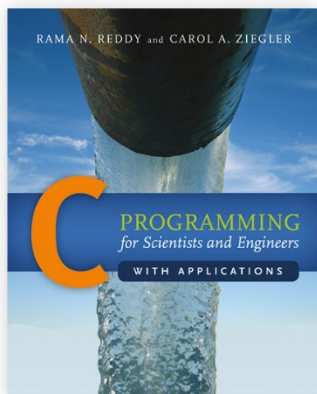
Intellectual Property Regulations

Setting Up Your cs.student Password

Setting Up the C Compiler on Windows

Transferring Files to/from the Student Environment

Textbook

C Programming for Scientists and Engineers with Applications

First Edition

Rama Reddy; Carol Ziegler

There is also a digital version available. Check WStore.

Here is the link https://www.vitalsource.com/en-ca/products/c-programming-for-scientists-amp-engineers-with-rama-reddy-v9781284284522?term=9781284284522

Mark Computation

- Assignments 30% (10 assignments. No exceptions will be granted for any assignments. A0 is worth 0% but must be completed to receive grades for others and cannot be exempt).
- Midterm 20%
- Final exam 50%
- A student must **pass the assignment component** and **the weighted exams component** to **pass this course**.

Fair Contingencies for Emergency Remote Teaching.

We are facing unusual and challenging times. The course outline presents the instructor's intentions for course assessments, their weights, and due dates in Fall 2022. **As best as possible, we will keep to the specified assessments, weights, and dates.** To provide contingency for unforeseen circumstances, the instructor reserves the right to modify course topics and/or assessments and/or weight and/or deadlines with **due and fair notice to students. In the event of such challenges, the instructor will work with the Department/Faculty to find reasonable and fair solutions that respect rights and workloads of students, staff, and faculty.**

Course Work/Structure

There are 10 assignments, midterm and final exam. Assignments are due at 11:59pm on Friday(Exceptions: Assignment 10). Assignments must be submitted using Marmoset. All grades will be listed on LEARN. Due dates are firm and final. Late work will receive a grade of 0.

Plagiarism

All work in CS 137 is to be done individually. The penalty for plagiarism on assignments (first offence) is an assigned mark of 0 percent on the assignment and a 5 percent reduction of the final grade, consistent with the School of Computer Science policy. Besides, a letter detailing the offence is sent to the Associate Dean of Undergraduate Studies, meaning that subsequent offences will carry more severe penalties, up to suspension or expulsion. We will run Moss on your submissions to ensure there is no plagiarism. Please note: Sending pictures of solutions/attempted solutions to one another is an act of plagiarism! Discussing solutions with others is also an act of plagiarism. There is also an excellent memo on posting solutions on GitHub/publicly. Please do not do this as this is also an act of plagiarism (Waterloo has a private GitHub repository git.uwaterloo.ca where you can host solutions to share only with employers looking for a record of your work). **There exist automated tools that can "auto-complete" your work by generating text, mathematical proofs or software / code (e.g., copilot). The SE/CS/Math academic integrity office views the use of such tools as committing an academic integrity offence Academic Integrity**

To maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. Check the academic integrity Web site for more information at https://uwaterloo.ca/academic-integrity/.

Use of MOSS

MOSS (Measure of Software Similarities) is used in CS137 as a mean of comparing students? Assignments to support academic integrity. You have the option to opt-out of this but if you choose to exercise this option, we will still compare your assignment based on the other submissions.

Grievance

A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70, Student Petitions and Grievances, Section 4, at https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70. When in doubt, please be certain to contact the department's administrative assistant who will provide further assistance.

Discipline

A student is expected to know what constitutes academic integrity to avoid committing academic offences and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about' rules' for group work/collaboration should seek guidance from the course professor, academic advisor, or the undergraduate associate dean. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline, at https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-71. For typical penalties, check Guidelines for the Assessment of Penalties at https://uwaterloo.ca/secretariat/guidelines/guidelines-assessment-penalties.

Appeals

A decision made or penalty imposed under Policy 70, Student Petitions and Grievances (other than a petition) or Policy 71, Student Discipline may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72, Student Appeals, at https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-72

Illness

As mentioned, there will be no exceptions for assignments whatsoever (start early to avoid any delay. In case you were sick for more than two days, then with a doctor note provided, contact the instructor before the assignment due to discuss options). Missing the final exam will follow the university's policy on missing a final examination. Failure to arrange a suitable sitting will result in an INC for the course. If you choose to complete the final exam while sick, your grade will count, and there will not be any weight shifting.

Disabilities

Note for students with disabilities: AccessAbility Services, located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum (see http://uwaterloo. ca/disability-services). If you require academic accommodations to lessen the impact of your disability, please register with them at the beginning of each academic term.

Intellectual Property Regulations

Students should be aware that this course contains the intellectual property of their instructor, TA, and/or the University of Waterloo. Intellectual property includes items such as:

- The lecture content, spoken and written (and any audio/video recording thereof);

- Lecture handouts, presentations, and other materials prepared for the course (e.g., PowerPoint slides);

- Questions or solution sets from various types of assessments (e.g., assignments, quizzes, tests, final exams); and

- Work protected by copyright (e.g., any work authored by the instructor or TA or used by the instructor or TA with permission of the copyright owner).

Course materials and the intellectual property contained therein are used to enhance a student's educational experience. However, sharing this intellectual property without the intellectual property owner's permission violates intellectual property rights. For this reason, it is necessary to ask the instructor, TA and/or the University of Waterloo for permission before uploading and sharing the intellectual property of others online (e.g., to an online repository).

If you wish to share your code with potential employers, you may host your code in a private repository and provide a password to potential employers (for example, on your resume). Note that UW hosts a Git Server, on which you may host private code repositories, free of charge, that can be shared with potential employers.

Permission from an instructor, TA or the University is also necessary before sharing the intellectual property of others from completed courses with students taking the same/similar courses in subsequent terms/years. In many cases, instructors might be happy to allow the distribution of certain materials. However, doing so without expressed permission is considered a violation of intellectual property rights.

Please alert the instructor if you become aware of intellectual property belonging to others (past or present) circulating, either through the student body or online. The intellectual property rights owner deserves to know (and may have already given their consent).

Purpose of Piazza

Piazza is a great way to ask questions about your assignments and course material in public. It enables you to learn from others' questions and avoid asking questions that have already been asked. It also provides a forum for the instructor to make announcements and clarifications about assignments and other course-related topics. As a result, students are expected to read the CS 137 Piazza regularly.

Setting Up Your Piazza Account

Click on the link above. Select "Sign Up" at the top of the screen. Search for University of Waterloo. Search for CS 137, click "Student" then click "Join Classes". Register yourself by your uwaterloo.ca email address, choose your own password.

Using Piazza

To post a question on Piazza, click on "+ New Post" at the top of the page. You will have the option of posting a question and posting a note. Questions should be posted if an answer is expected, whereas notes should be posted if an answer is not expected but the content of the note is believed to be helpful to both the students and the instructors.

On every question posted on Piazza, there is a students' response box where you can answer other students' questions. Furthermore, if a student has already filled out the students' response box but could have included more information, you can edit their response to include the additional information.

If the student response is satisfactory but you still have questions relating to the original question, you can ask these questions in the follow-up discussion box.

Instructors and TAs will be checking Piazza regularly to answer student questions and to monitor student behaviour on Piazza. Please read the Newsgroup Guidelines below to avoid committing any offence while using Piazza.

Posting Guidelines

Here are some guidelines that you should keep in mind when posting messages.

1. Please remember that everything you post is public -- everyone will be reading it. As a result, in any posts you make to Piazza, do not give away any details in doing any of the assignments -- this could be construed as cheating. If you have questions about an assignment requiring you to give specific details of your solution, visit office hours or email to cs137@uwaterloo.ca . We have disabled the "anonymous" posting capability (although you will have the option of appearing anonymous to your classmates).

2. Keep posts on Piazza course-related. However, as you are all expected to read the forum regularly, and many of you are pretty busy, people don't have time to read stuff they shouldn't have to. Concerning this, Piazza is not for posting "test" posts.

3. Please read all questions and responses that are on Piazza before asking a question. If you ask a question that has already been answered, you are wasting everyone's time. We realize that there is a lag between the time

something is posted and when it appears in the group, so this is unavoidable. However, please try to avoid it as best as possible.

4. Please don't post things to the group that give no useful information to people. Posts like "I have the same question as this one posted" or "I agree with this comment" serve no useful purpose, and waste people's time.

5. Please keep complaints about the course out of the newsgroup. If you have a concern about anything to do with the course, the best way to deal with it, and to get results, is to take it to the instructor. Piazza is not a complaint forum.

6. Please be respectful of your peers and others in your posts.

Finding Help

Feeling Overwhelmed with CS137?

Many people struggle with the academic aspects of the university. If you are facing challenges, please know that you are not alone. Do not let shyness or embarrassment prevent you from getting help. It is not true that universities want or need to lose a certain percentage of students. In this faculty, "weeding out" is a myth. We want you to be successful. Many things, including those out of your control, can happen to make this difficult.

Please speak to your instructor and/or academic advisor if you are concerned about your undergraduate career in general or CS137 in particular.

The Faculty of Mathematics also has a [list of services available to you](#).

Please do not suffer alone. We are here to help.

SE Academic Advisors

This term, contact your instructor, She is also your academic advisor and associate director of SE program

Student Success Office

The [Student Success Offices](#) provides academic and personal development services, resources for international students, as well as study abroad and exchange support. They work closely with campus partners to create a vibrant experience for students from their first days at Waterloo, right to convocation.

Mental Health Resources

If you or anyone you know experiences any academic stress, difficult life events, or feelings like anxiety or depression, we strongly encourage you to seek support.

On-campus Resources

- Campus Wellness helps all students at the University of Waterloo. Their professionals provide primary medical care and mental health services using an inclusive, connected, and collaborative approach. It's located across the creek from the Student Life Centre.

- Counselling Services, and Engineering Counselling. Each is a team of professionals that provides programming and services to help you lead a healthy and balanced life. They strive to provide a secure, supportive environment for students of all orientations and backgrounds.

- MATES (Mentor Assistance Through Education and Support) is a one-to-one student peer support program offered by the Federation of Students in consultation with Campus Wellness. MATES provides support to students who are hoping to build social skills or are experiencing personal or academic concerns or low-level mental health and wellness difficulties. MATES volunteers are also well-trained and knowledgeable about various resources on and off-campus and can assist students through the navigation of those resources.

Off-campus Resources

- Good2Talk is a free, confidential, 24/7/365 helpline for post-secondary students. Phone: 1-866-925-5454

- Here 24/7 A Waterloo-Wellington mental health and crisis service team. Phone: 1-844-437-3247

- OK2BME is a set of support services for lesbian, gay, bisexual, transgender or questioning teens in Waterloo. Phone: 519-884-0000 or email ok2bme@kwcounselling.com.

Students with Disabilities

The Student Success Offices provides academic and personal development services, resources for international students, as well as study abroad and exchange support. They work closely with campus partners to create a vibrant experience for students from their first days at Waterloo, right to convocation.

Diversity

It is our intent that students from all diverse backgrounds and perspectives be well served by this course, and that students' learning needs be addressed both in and out of class. We recognize the immense value of the diversity in identities, perspectives, and contributions that students bring, and the benefit it has on our educational environment. Your suggestions are encouraged and appreciated. Please let us know ways to improve the effectiveness of the course for you personally or for other students or student groups. In particular:

- We will gladly honour your request to address you by an alternate/preferred name or gender pronoun. Please advise us of this preference early in the term so we may make appropriate changes to our records.

- We will honour your religious holidays and celebrations. Please inform us of these at the start of the course.

- We will follow AccessAbility Services guidelines and protocols on how to best support students with different learning needs.