CSE 3100 – 011 Syllabus - Fall 2023

Course Title: CSE 3100 (Systems Programming)
Credits: 3
Prerequisites: CSE 2050

Course Description

Introduction to system-level programming with an emphasis on C programming, process management, and small scale concurrency with multi-threaded programming. Special attention will be devoted to proficiency with memory management and debugging facilities both in a sequential and parallel setting.

Lectures

Lecture Section	Section 011	Section 031
Instructor	Wei Wei	Wei Wei
Meeting time	MoWe 1:25PM - 2:15PM	MoWe 10:10AM - 11:00AM
Location	MONT 104	GW 001

Lab sections

Section	TA	Time	Location
011L		Fr 8:00AM - 9:50AM	ITE 134
012L		Fr 10:00AM - 11:50AM	ITE 134
013L		Fr 12:15PM - 2:05PM	ITE 134
014L		Fr 2:15PM - 4:05PM	ITE 134
015L		Fr 12:15PM - 2:05PM	ITE C27
032L		Fr 10:10AM - 12:00PM	ITE C13
033L		Fr 12:15PM - 2:05PM	ITE C13
034L		Fr 8:00AM - 9:50AM	ITE C27
035L		Fr 2:15PM - 4:05PM	ITE C27

Websites

HuskyCT for grades and sections specific materials, and announcements.
Linux Virtual Machines for lab and homework assignments.
Piazza for discussions. If you have non-personal questions, ask on Piazza.
iClicker for class discussion and participation.
An iClicker remote or an iClicker Reef account is required for class discussion and participation.

Instructors/TAs and office hours

Name	Email	Room	Office Hours
Wei Wei	wei.wei@uconn.edu	ITE 258	MoWe 2:30pm – 3:30 pm
William Qualls	william.qualls@uconn.edu	ITE 114	
Swamy Narayan Jignaas Pattipati	psnjignaas@uconn.edu	ITE 114	
Ya-Sine Agrignan	ya-sine.agrignan@uconn.edu	ITE 114	
Andrew Cheng	andrew.cheng@uconn.edu	ITE 114	
Cole Roger Lavigne	cole.lavigne@uconn.edu	ITE 114	
Colin Gorski	colin.gorski@uconn.edu	ITE 114	
Dylan James Cassidy	dylan.j.cassidy@uconn.edu	ITE 114	
Gautam Pirthiani	gautam.pirthiani@uconn.edu	ITE 114	
Jasper Cheng	jasper.cheng@uconn.edu	ITE 114	
Maksym Haydamakha	maksym.haydamakha@gmail.com	ITE 114	
Marshall Heath Flowers	marshall.flowers@uconn.edu	ITE 114	
Nitin Nathan	nitin.nathan@uconn.edu	ITE 114	
Sunwang Luo	sunwang.luo@uconn.edu	ITE 114	
William Bartholomay	william.bartholomay@uconn.edu	ITE 114	
William Hughes Shostak	will.shostak@uconn.edu	ITE 114	
Harrison Hua	harrison.hua@uconn.edu	ITE 114	
Andrew Fang	andrew.fang@uconn.edu	ITE 114	

Course Materials

Required textbooks

Al Kelley and Ira Pohl, A Book on C, 4th Edition, Addison-Wesley, ISBN-13: 978-0201183993.

David R. Butenhof, Programming with POSIX Threads, 1st Edition, Addison-Wesley, ISBN-13: 978-0201633924.

Required Text:
A Book on C: Programming in C (4th Edition)
by Al Kelley, Ira Pohl

Programming with POSIX Threads
by David R. Butenhof
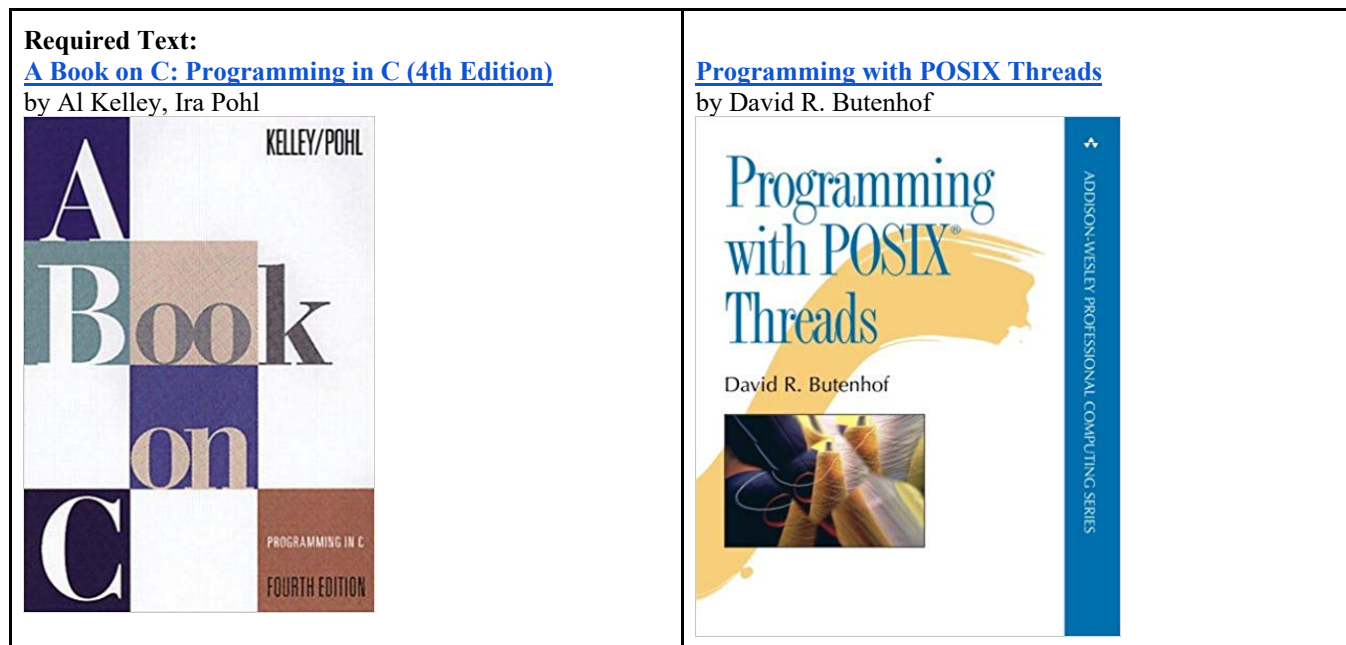
Optional

Brian W. Kernighan and Dennis M. Ritchie, The C Programming Language, 2nd Edition, Prentice Hall, ISBN-13: 978-0131103627.

Thorsten Grötker, Ulrich Holtmann, Holger Keding, and Markus Wloka. The Developer's Guide to Debugging, 2nd Edition, CreateSpace, ISBN-13: 978-1470185527.

Course Outline and Schedule

The Schedule is subject to change.

Week #1	Course Overview; Intro to C (ABC Ch2, K&R Ch1)
Week #2	Basic data types (ABC Ch2 & Ch3, K&R Ch2)
Week #3	Flow of control and functions (ABC Ch4 & Ch5, K&R Ch3 and Ch4)
Week #4	Arrays and dynamic memory (ABC Ch6, K&R Ch5)
Week #5	Pointers and structures (ABC Ch9, K&R Ch6)
Week #6	I/O and library functions (ABC Ch11, K&R Ch7)
Week #7	Processes (ABC Ch12)
Week #8	Pipes (ABC Ch12). Intro to threads
Week #9	Thread management. Thread synchronization: mutex and condition variables
Week #10	Thread synchronization: read-write locks and barriers
Week #11	Threads misc. topics: local storage, cancellation, real-time scheduling, false sharing
Week #12	Intro to Sockets (Beej's guide)
Week #13	Client-server communication using sockets (Beej's guide)
Week #14	Signal (ABC Ch12) and Misc. Topics

Course Requirements and Grading

There will be (almost) weekly lab and homework assignments, and three exams. To keep track of your performance in the course, check your "My Grades" in HuskyCT, and grades in iClicker Reef accounts.

If you have questions regarding the grading of your homework, assignments, projects or exams, you MUST come to see either the instructor or the TA within ONE WEEK after graded work is returned to you (or to the class). You are responsible to check your grade book on HuskyCT and ensure that all submitted works are graded correctly.

Grade breakdown

The final grade is based on the weighted total of components in the course.

Course Components	Weight
Lab assignments	10%
Homework assignments	30%
Exam #1	15%
Exam #2	20%
Exam #3	25%
Extra Credit	6%

The lowest homework assignment score and lowest lab score will be dropped from the overall grade calculation.

Extra credits: Random iCliker quizzes will be given in class and add up to 3 extra points. No makeup for missing in-class quizzes. Code-for-thought problems add up to 3 extra points.

Grading Scale

Numerical Grade	Letter Grade	GPA
93-100	A	4.0
90-92	A-	3.7
87-89	B+	3.3
83-86	B	3.0
80-82	B-	2.7
77-79	C+	2.3
73-76	C	2.0
70-72	C-	1.7
67-69	D+	1.3
63-66	D	1.0
60-62	D-	0.7
<60	F	0.0

Late Policy

Homework assignments are due at midnight on the specified due date. All due dates are in local time at UConn. To ensure timely grading and feedback, late submissions will not be accepted.

Collaboration policy

Unless otherwise specified, all lab and homework assignments must be completed individually. All programs and documents you hand-in must be your own work. You may discuss course related topics with others, but you must not share code or written solutions. Reasonable use of published materials (including web resources) is allowed, but all sources must be explicitly acknowledged in your submissions. Violations will be reviewed and sanctioned according to the University Policy on Academic Integrity. An example of unreasonable use is submitting copied solutions with minor changes like renaming variables. If you need additional clarifications regarding the collaboration policy, please contact the instructors or TAs.

Exams

Exam policy will be sent out before exams using HuskyCT announcement.

Email Policy

Put the course number and section number in the subject. For example: CSE3100-SEC011L.

Do not wait until last minute to work on assignments. TAs and professors may not be able to answer questions in the evening on the due dates.

Post questions on discussion board if they do not have personal information. Other students can help to answer the questions, too.

Ask specific questions instead of general questions. Some bad examples are: I do not know why it is not working; I do not understand Chapter 2.

Students with Disabilities

If you have a documented disability for which you are or may be requesting an accommodation, please contact the Center for Students with Disabilities (CSD) (by calling (860) 486-2020 or by emailing csd@uconn.edu) by the end of the third week of the semester to better ensure that any accommodations you need can be implemented in a timely fashion. (Note: Student requests for accommodation must be filed each semester.)

Blackboard measures and evaluates accessibility using two sets of standards: the WCAG 2.0 standards issued by the World Wide Web Consortium (W3C) and Section 508 of the Rehabilitation Act issued in the United States federal government." (Retrieved March 24, 2013 from Blackboard's website)

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Student Responsibilities and Resources

As a member of the University of Connecticut student community, you are held to certain standards and academic policies. In addition, there are numerous resources available to help you succeed in your academic work. Review these important standards, policies and resources, which include:

- The Student Code
  - Academic Integrity
  - Resources on Avoiding Cheating and Plagiarism
- Copyrighted Materials
- Netiquette and Communication
- Adding or Dropping a Course
- Academic Calendar
- Policy Against Discrimination, Harassment and Inappropriate Romantic Relationships
- Sexual Assault Reporting Policy

Help

Technical and Academic Help provides a guide to technical and academic assistance.

This course is completely facilitated online using the learning management platform, HuskyCT. If you have difficulty accessing HuskyCT, you have access to the in person/live person support options available during regular business hours through the Help Center. You also have 24x7 Course Support including access to live chat, phone, and support documents.

Evaluation of the Course

Students will be provided an opportunity to evaluate instruction in this course using the University's standard procedures, which are administered by the Office of Institutional Research and Effectiveness (OIRE).

Additional informal formative surveys may also be administered within the course as an optional evaluation tool.