CSE 3100 Systems Programming – Fall 2016

Lecture: MoWe 3:35pm–4:25pm, FSB 220
Lab: Fr. 9:05am–11:00am (sec. 1)/Fr. 11:15am–1:10pm (sec. 2), ITE 138

Instructor:
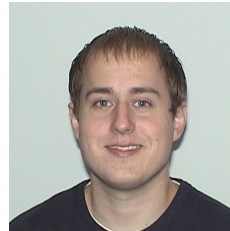

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    Tu/Th 5pm-6pm
    We 12:30pm-2pm

Teaching Assistants:

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    Fr. 1:10pm-2:40pm
    Mo. 11am-1pm

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Office Hours:
    By appt. only

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.

Required Texts:

- 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.

Optional Texts:

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

- Daniel J. Barrett, *Linux Pocket Guide*, 2nd Edition, O'Reilly, ISBN-13: 978-1449316693

Grade breakdown:

Labs	10%
Take-Home Assignments	20%
Two Midterm Exams	20% each
Final Exam	30%

The lowest take-home assignment score and lowest lab score will be dropped from the overall grade calculation.

Late policy: All assignments are due on the specified due date at midnight. To ensure timely grading and feedback, late submissions will not be accepted.

Collaboration policy: Unless otherwise specified, all assignments and exams 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. Use of published materials (including web resources) is allowed, but all sources must be explicitly acknowledged in your submissions. If you need additional clarifications regarding the collaboration policy, please contact the instructor.

Moodle & Slack sites: A Moodle site is set up for the class at http://dna.engr.uconn.edu/moodle/. You are strongly encouraged to check it frequently for reading assignments, course handouts, and grades. For class announcements and discussions we will use Slack. You can access the class site at https://cse3100f16.slack.com after accepting the invitation to join the cse3100f16 team. Use Slack to ask class-related questions and communicate with other students in the class, the instructor, and the TAs. Please observe basic netiquette by keeping your messages polite, concise, and on-topic. Before posting new messages do take a look at the postings that are already there–it is possible that your question has already been answered. Appropriate questions are general questions about the material and clarifications on the assignments. Keep in mind that the collaboration policy is in effect, and you must not post extensive code fragments. For questions that are specific to your work use direct messages to the instructor or the TAs.

Students with disabilities: If you have a documented disability for which you are or may be requesting an accommodation, you are encouraged to contact the instructor and the Center for Students with Disabilities or the University Program for College Students with Learning Disabilities as soon as possible to better ensure that such accommodations are implemented in a timely fashion.

Tentative Schedule

Week #	Lecture dates	Lecture topics
1	Aug 29 & 31	Course intro, overview of C (ABC Ch2, K&R Ch1)
2	Sept. 7	Lexical elements and fundamental data types (ABC Ch2 & Ch3, K&R Ch2)
3	Sept. 12 & 14	Flow of control and functions (ABC Ch4 & Ch5, K&R Ch3 & Ch4)
4	Sept. 19 & 21	Arrays and pointers, structures (ABC Ch6 & Ch9, K&R Ch5 & Ch6)
5	Sept. 26 & 28	Input/Output (ABC Ch11, K&R Ch7)
6	Oct. 3 & 5	Miscellaneous C topics, Mid-Term #1
7	Oct. 10 & 12	Processes and pipes (ABC Ch12)
8	Oct. 17 & 19	Signals and intro to sockets (ABC Ch12, Beej's guide)
9	Oct. 24 & 26	Client-server communication using sockets (Beej's guide)
10	Oct. 31 & Nov. 2	Sockets Selection (Beej's guide), Midterm #2
11	Nov. 7 & 9	Intro to threads, thread management (PPT Ch2)
12	Nov. 14 & 16	Thread synchronization: mutexes, spinlocks, and condition variables (PPT Ch3)
13	Nov. 28 & 30	Thread synchronization: read-write locks, barriers, and semaphores (PPT Ch6 & Ch7)
14	Dec. 5 & 7	Threads local storage and cancellation, real-time scheduling (PPT Ch5)