

# SYLLABUS

## CSC 374 Systems II Winter 2023

January 3, 2023

<b>Instructor:</b>	Dale Buchholz
<b>Class Time:</b>	Tuesday 5:45-9:00 pm
<b>Location:</b>	Loop Campus – Lewis 1005
<b>Office Hours:</b>	Tuesday 4:00-5:30 pm or by appointment (Zoom)
<b>Phone:</b>	312-362-6819
<b>Office:</b>	CDM 617
<b>E-mail:</b>	dbuchholz@cdm.depaul.edu (or dbuchhol@depaul.edu)
<b>Prerequisite:</b>	CSC 373 Systems I
<b>Texts:</b>	Bryant & O'Hallaron, <i>Computer Systems: A Programmer's Perspective, 2nd Edition</i> , Prentice Hall/Pearson, 2011. ISBN: 978-0136108047 Kernighan & Ritchie, <i>The C Programming Language, 2nd Edition</i> , Prentice Hall, 1988. ISBN: 978-0131103627

### ***Course Summary:***

This course is the second of a two-course sequence covering the concepts underlying all computer systems and how they affect the correctness, performance, and utility of application programming. We will cover, in particular, the topics of optimizing program performance, linking, processes and exceptional control flow, system-level I/O and networking, concurrent programming, and finally web services as a current example of distributed system technology.

### ***Learning Outcomes:***

- improve your C programming skills;
- learn techniques for improving code performance;
- understand static and dynamic linking, and how to avoid some common linking errors;
- understand the concept of exceptional control flow and of a process, and how to use this knowledge when developing applications such as shells and web servers;
- understand the basic concepts of UNIX I/O and how it is used to develop networked applications and distributed systems;
- know how to write concurrent programs and, in particular, multi-threaded programs, and how to develop a multi-threaded web server;
- successful completion will allow you to take advanced, technical CSC and SE courses.

### ***Coursework and Grades:***

Required coursework components and their contribution to the final grade will be:

- a) 5 Homeworks (50 pts each; total 250 pts)
- b) 3 Labs (100 pts each; total 300 pts)
- c) Final Exam (100 pts)

Further details on each assignment will be distributed in class. Final grades will be calculated as follows: points earned divided by possible points yields a total course percentage between 0% and 100%. Final letter grades will be assigned as:

<b>Percent</b>	<b>Grade</b>	<b>Percent</b>	<b>Grade</b>
93-100	A	77-79	C+
90-92	A-	73-76	C
87-89	B+	70-72	C-
83-86	B	60-69	D
80-82	B-	< 60	F

***Late Assignments:***

Late assignments will be accepted solely at the discretion of the instructor. The student MUST notify the instructor in advance if an assignment will be turned in late.

Homework assignments, labs and the final exam must be completed individually. Class attendance (sync or async) is strongly recommended since lectures may cover topics outside the text. All class sessions will be recorded for asynchronous viewing.

***Class Schedule and Text:***

Class dates, topics, readings, and assignments are shown in the Class Schedule below.

# Class Schedule

## CSC 374 —Winter Quarter 2023

### (January 3, 2023)

<i>Date</i>	<i>Topics</i>	<i>Readings</i>	<i>Assignments</i>
Week 1 Jan. 3	Course Overview Review of Linux and C		HW0 due (Jan. 8)
Week 2 Jan. 10	Memory Hierarchy and Caching	Chapter 6	
Week 3 Jan. 17	Linking	Chapter 7	HW 1 due (Jan. 15)
Week 4 Jan. 24	Processes, Exceptions and Signals	Chapter 8	Lab 1 due (Jan. 22)
Week 5 Jan. 31	Virtual Memory Part 1	Chapter 9	HW 2 due (Jan. 29)
Week 6 Feb. 7	Virtual Memory Part 2	Chapter 9	HW 3 due (Feb. 5)
Week 7 Feb. 14	System Level I/O	Chapter 10	Lab 2 due (Feb. 12)
Week 8 Feb. 21	Network Programming	Chapter 11	HW 4 due (Feb. 19)
Week 9 Feb. 28	Concurrent Programming	Chapter 12	HW 5 due (Feb. 26)
Week 10 Mar. 7	Optimizing Program Performance	Chapter 5	Lab 3 due (Mar. 5)
Week 11 Mar. 14	Final Exam <b>Out Monday, Mar. 6</b>		<b>Due Tuesday, Mar. 14</b>

**Changes to Syllabus:** This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be thoroughly addressed during class, posted under Announcements in D2L and sent via email.

### Online Course Evaluations

Evaluations are a way for students to provide valuable feedback regarding their instructor and the course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. They are a requirement of the course and are key to continue to provide you with the highest quality of teaching. The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students

do not receive reminders once they complete the evaluation. Please see <https://resources.depaul.edu/teaching-commons/teaching/Pages/online-teaching-evaluations.aspx> for additional information.

## **Academic Integrity and Plagiarism**

This course will be subject to the university's academic integrity policy. More information can be found at <https://resources.depaul.edu/teaching-commons/teaching/academic-integrity/Pages/default.aspx>.

## **Academic Policies**

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the [University Academic Calendar](#). Information on enrollment, withdrawal, grading and incompletes can be found at: <http://www.cdm.depaul.edu/Current%20Students/Pages/PoliciesandProcedures.aspx>

## **Incomplete Grades**

An incomplete grade is a special, temporary grade that may be assigned by an instructor when unforeseeable circumstances prevent a student from completing course requirements by the end of the term and when otherwise the student had a record of satisfactory progress in the course. All incomplete requests must be approved by the instructor of the course and a CDM Associate Dean. Only exceptions cases will receive such approval. Information about the Incomplete Grades policy can be found at:

<http://www.cdm.depaul.edu/Current%20Students/Pages/Grading-Policies.aspx>

## **Students with Disabilities**

Students seeking disability-related accommodations are required to register with DePaul's Center for Students with Disabilities (CSD) enabling them to access accommodations and support services to assist with their success. There are two office locations:

- Loop Campus (312) 362-8002
- Lincoln Park Campus (773) 325-1677
- Email: [csd@depaul.edu](mailto:csd@depaul.edu)

Students who register with the Center for Students with Disabilities are also invited to contact Dr. Gregory Moorhead, Director of the Center, privately to discuss how he may assist in facilitating the accommodations to be used in a course. This is best done early in the term. The conversation will remain confidential to the extent possible. Please see <https://offices.depaul.edu/student-affairs/about/departments/Pages/csd.aspx> for Services and Contact Information.