NET 311/411 Syllabus – Computers in Teleco. Systems – Summer 2023

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Office Hours	Tuesdays 10:00 – 11:30 (or by appointment)	**Website**	d2l.depaul.edu
Class Location	CDM 224	**Class time**	**Tuesdays 5:45 pm – 9 pm**

--- Any changes made to this syllabus will be announced in class as well as D2L --- This is Version 1: June 12 ---

Course Overview

This course is an introduction to computer architecture and operating systems with an emphasis on network systems. Topics covered include computer components and functions, logic circuits, process management, memory management, file management, interrupts and I/O peripheral devices, as well as computer networks, distributed systems, and network administration. Students will have several hands-on labs utilizing a Linux environment and will use Shell script for basic systems and network administration as well.

Resources:

Optional textbook: *Systems Architecture*, 7th edition, by Stephen Burd.

Grade distribution over required coursework

Task	% of final grade
2 Homework assignments	20 %
2 Lab exercises	20 %
1 Quiz	5 %
Midterm exam	25 %
Final exam	25 %
Class participation	5 %

Coursework

Course topics expected to be covered in each class and the corresponding readings from the textbook, are listed on page 3. The Class Participation & Discussion grade will be **earned** as follows: students gain **0.5 %** credit towards their final grade for each lecture *actively* attended (total of up to 5% of final grade for 10 class sessions).

Active attendance means that you will respond if I call on you, **and** actively engage in class discussions. It is critical that you strive to attend all class sessions, and engage with the material in the live class discussions. **Asynchronous** students need to email in their weekly responses no later than one day after the class.

Course policies & guidance

General 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: cdm.depaul.edu/enrollment. Note that June 16th, 2023 is the last date to drop the class with no penalty.

Mental Health and Academic Assistance

Balancing the hard work of achieving your educational goals with the other demands of life is difficult at the best of times. For many of us, for a variety of reasons, things are all the more difficult now. I want to make sure you feel comfortable, not embarrassed, reaching out to me for support. I will also point out where the University has great resources just a phone call or email away. These have been created and maintained for you, so use them. Sometimes people feel like their situation isn't the worst possible, so they assume they do not need help, but don't let that prevent you from reaching out!

- *DePaul University Counseling Services* – mental health is as important as physical health, and we have professionals just a call away: https://offices.depaul.edu/student-affairs/about/departments/Pages/ucs.aspx (call (773) 325-7779 or 911 for emergency).
- The kind people at the *Office of the Dean of Students* can help you with a wide range of topics, including figuring out if you should withdraw or apply for an incomplete: https://offices.depaul.edu/student-affairs/about/departments/Pages/dos.aspx.
- There are lots of additional, more specific resources listed here with the *Office of Student Affairs*, including crisis hotlines and sexual assault resources: https://offices.depaul.edu/student-affairs/support-services/counseling/Pages/Crisis-Hotlines.aspx.

Plagiarism

There is a "zero-tolerance policy" regarding plagiarism. This stands for both the plagiarizer and the person(s) facilitating plagiarism (e.g., allowing someone to plagiarize their work). There's a great resource put together by DePaul University, which you can find here: https://resources.depaul.edu/teaching-commons/teaching-guides/learning-activities/Pages/avoiding-plagiarism.aspx

Academic Integrity

One of the core principles of education is establishing Academic Integrity. It is a viable component in the classroom, one by which learning objectives could be honestly and efficiently met. The principles of academic integrity should span all of your learning endeavours, within and beyond this course. For more information on Academic Integrity, especially definitions and norms, please visit: https://resources.depaul.edu/teaching-commons/teaching/academic-integrity/Pages/default.aspx. This will be the basis of all of our interactions in this course. If you have any questions or concerns, feel free to drop by and see me. All students are expected to abide by the University's Academic Integrity Policy which prohibits cheating and other misconduct in student coursework. Publicly sharing or posting online any prior or current materials from this course (including exam questions or answers), is considered to be providing unauthorized assistance prohibited by the policy. Both students who share/post and students who access or use such materials are considered to be cheating under the Policy and will be subject to sanctions for violations of Academic Integrity.

Deadlines and submission policies

Assignments are due on D2L by 11:59 pm on the deadline day posted on each assignment, unless otherwise announced. All of your work (exams, assignments, report, etc) must be your original work. Any evidence of departure from Academic Integrity will be reported, and ensuing sanctions will be pursued. You are expected to read, understand and comply with DePaul's policy on Academic Integrity. **Late submissions receive a 10% penalty for every 24 hour delay**, starting from the minute past the deadline.

Missing exams and/or deadlines

Emergencies happen and that is quite understandable. If you miss an exam due to an emergency (e.g., accident, emergency hospitalization, etc) please communicate with me as soon as you can to resolve any outstanding issues. If a major illness hinders you from attending an exam or submitting a deliverable (assignment), you need to contact me beforehand via e-mail. Notices received after the deadline will not be accounted for (unless for an emergency as highlighted above). If the illness occurred after the deadline, even if accompanied with a doctor's note, you would receive a zero for that exam/deliverable. Otherwise, missing an exam without prior approval will warrant an automatic zero. Generally, all extensions are considered on a case-by-case basis. Falling sick prior to a deadline does not automatically warrant an extension. If you have any questions or concerns, please don't hesitate in contacting me.

Disability Accommodation

Feel free to speak to me as soon as possible regarding any difficulties you feel you might be encountering in this course, ideally within our first week of classes. If you feel that any given disability is hindering you, or you are not sure and wish for a consult, please reach out to CSD at csd@depaul.edu; they are trained to help out and point you to the appropriate resources.

Grade calculation

Final grades will be calculated as follows: points earned divided by possible points in each category will be multiplied by the contribution percentages shown to yield a total course percentage score between 0% and 100%. Letter grades will be assigned as:

A = 90% - 100%   A- = 88% - 90%   B+ = 86%-88%   B = 80% - 86%   B- = 78% - 80%

C+ = 76% - 78%   C = 70% - 76%   C- = 68% - 70%   D+ = 66% - 68%   D = 60% - 66%   F = 0% - 60%

Class schedule and topics

Week	Class date	Tentative Topics	Textbook readings	Assignments (on the week of - tentative)
1	June 13	Course overview Computer Architecture	Ch. 1 Ch. 2	
	June 15	Data Representation Processor technology and Architectures CPU and Digital/Logic Circuit Designs	Ch. 3 Ch. 4	HW 1 posted
2	June 20	**Quiz** Memory management File systems and storage hierarchies	Ch. 5	HW 1 due
	June 22	Operating Systems Process Synchronization and Management	Ch. 11	HW 2 posted
3	June 27	**Midterm exam** Process Synchronization and Management	**Same time for all students**	
	June 29	*Asynchronous class – recording posted on D2L* Caching systems and Personal Clouds Intro to Linux	Ch. 12	HW 2 due
4	July 4	*Independence day – University closed – No class*	Ch. 9	Lab 1 posted
	July 6	Principals of Network simulation Linux System & Network Administration	Ch. 6 & 9	Lab 1 due
5	July 11	Performance metrics Distributed Application Services	Ch. 13	Lab 2 posted
	July 13	Virtualization *Final Exam preparation*		Lab 2 due
	July 18	**Final Exam 18:00 – 20:15 - same time for all students**		

Learning Outcomes

After completing this course, students will be able to:

- Perform numbering conversions and Boolean operations
- Describe the components of a Computer's system architecture, and those of network devices
- Describe the logical components of an operating systems, and their functions
- Perform OS scheduling functions and process synchronization
- Install Linux on a Virtual Machine (VM) environment.
- Perform system and network administration on a VM environment.
- Evaluate system performance using various measurements, and identify pertinent KPIs

Exams (midterm and final) will be carried out in person

All exams (except the quiz) will be in person on paper. The quiz will be on D2L using Lockdown browser.

Async students need to arrange their exams through the CDM exam office. You will need to register for the exam once it is posted on D2L, and arrange for a location to take the exam. Please read about the policies here: https://www.cdm.depaul.edu/onlinelearning/pages/exams.aspx

Online course evaluations

During the course, your feedback on how well the course is running (pace, difficulty, resources, etc) will be solicited. This is a vital component of improving and tailoring this course to your learning objectives. While all students are expected to achieve the learning outcomes highlighted above, each of us inevitably learn differently. This course is designed to meet the aforementioned learning outcomes, and I will endeavor to incorporate different activities to improve the learning experience. 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. If you have any concerns about how the course is running, or would like to suggest an improvement, feel free to reach out to me. Also, on week 10, we will hold the official course evaluations in class.