# IT 263 Syllabus – Applied Networks and Security – Spring 2023

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| **Professor** | Dr. Nazli Siasi | **Phone** | (312) 362 - 5555 |
| **Office** | CDM 740 | **E-mail** | nsiasi@depaul.edu |
| **Office Hours** | Tu 3:00 PM-4:30 PM (in-person) | **Website** | d2l.depaul.edu |
| **Class Location** | LEWIS 1216 Loop Campus | **Class time** | Tu Th: 1:30 PM-3:00 PM |

**Communication:** Email is the best way to reach me, and I'll respond within 48 hours.

**Zoom Office Hours Link:** https://depaul.zoom.us/j/96549307950 (Zoom meetings by appointment)

## Course Purpose

- The objective of this course is to provide a technical and operational introduction to data/computer communication networks.
- Understand foundational networking topics and concepts.
- Develop a basic understanding of network through a layered approach in TCP/IP Model.
- Focusing on the Internet and the fundamentally important issues of networking.

## Student Learning Outcomes

After completing this course, students will be able to:

- Explain layered network architectures and topologies.
- Acquire basic understanding of network components and how they interact.
- Acquire knowledge of higher-level protocols.
- Describe packet forwarding through each network component.
- Plan IP address assignments through subnetting.
- Discuss various types of security attacks and how to mitigate them.
- Use tools such as Packet tracer to analyze network traffic.

## Required Texts and/or Readings and Software Tools

- Cisco Packet Tracer software tool
- Optional E-Text: Introduction to Networks (CDM-ItN-2023) Cisco Networking Academy.

**PREREQUISITE(S): None**

## Grade Distribution over Required Coursework

| Task | % of final grade |
|---|---|
| Participation | 5 % |
| Quizzes | 10 % |
| Assignments | 15 % |
| Labs | 15 % |
| Midterm Exams | 25 % |
| Final Exam | 30 % |
| Total | 100 % |

## Coursework

Lecture slides will be posted every week on D2L, and you can study the related reading material in the Network Academy Introduction to Networks e-text (CDM-ItN-2023) or any other network reference books.

**Note**: You are not required to do any activities or Labs within the CDM-ItN-2023 course on www.netacad.com. However, you are highly encouraged to complete them for extra practice if you wish.

## Deadlines and Submission Policies

**Practice problems** do not have any deadlines and will not be graded. **Multiple choice Quizzes, Assignments** and **LABs** are due on D2L by 11:59pm on the deadline day posted on each coursework, unless otherwise announced on D2L.

Late submissions: Any assignment and lab received after the deadline will have the following deductions: 5% penalty for 1 day late submission; 10% penalty for 1 to 3 days; 20% penalty for 3 to 1 week. No submissions will be accepted after one week past the deadline, and automatically will be assigned a zero grade.

All of your work (assignments, labs and exams) must be your original work (not AI generated). 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.

**IMPORTANT:** All exams (Midterm exams and Final exam) will be conducted in-person only. No make-up exams will be given. If exceptional circumstances prevent you from being available at the specified day and time for the midterm exams or the final exam, you should notify me at least 48 hours before the exam date of the midterms to arrange a make-up exam and provide written documentation of the emergency. To reschedule the final exam due to an emergency, two weeks prior notice is required by DePaul University before the final exam date, which allows the request to be evaluated by the registrar office. Failure to do so will result in zero grade for the exam. If you do not take the midterm and final exams, you will automatically receive a grade of F for the course.

## Class Participation

We are going to meet in class every week. Class attendance is not mandatory. However, you are expected to actively participate in discussions during class and/or on the D2L online discussion forum and demonstrate your engagement with the material. During lectures, you may be called upon to answer questions, participate in discussions and practice on the board. Your participation grade will be based on these in-person/online interactions. If you miss a lecture, you are expected to watch the full recorded lecture on D2L (CDM COL Recordings).

**D2L Discussion Forum**: You can use the D2L discussion forum to ask/answer questions, or post comments about course content such as assignments, labs, links, tools, course navigation, or any challenges you face in this course. While every student is encouraged to participate in the D2L discussion forums, note that participation in all forums is not mandatory.

## 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:

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| 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% |

## Course Policies & Guidance

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 **April 10** is the last date to drop the class with no penalty.

## Academic Integrity and Plagiarism

This course will be subject to the university's academic integrity policy. More information can be found at http://academicintegrity.depaul.edu/.

# Class schedule and Topics

| Week | Tentative Topics | |
|------|------------------|---|
| 1 | Course Overview | Quiz 1 |
|  | Network Basics | |
| 2 | Network Basics & Cabling | Quiz 2 |
|  | Link Parameters | |
| 3 | Protocols & Models | Quiz 3 |
|  | Data Encapsulation | |
| 4 | Layer 2 – Mac Address & Switches | Assignment 1 |
|  | Layer 3 – IP Address & Routers | |
| 5 | Numbered Systems & Subnetting<br>*Study guide and review* | Lab 1 |
|  | **Midterm Exam 1: 1:30pm-3:00pm** | |
| 6 | CIDR & NAT & IPV6 | Assignment 2 |
|  | IPv6 & Tunneling | Lab 2 |
| 7 | Layer 4 – TCP & UDP | In-class Practice |
|  | *Study Guide and Review* | |
| 8 | **Midterm Exam 2: 1:30pm-3:00pm** | Lab 3 |
|  | Layer 5 – DNS & HTTP & DHCP | |
| 9 | Information & System Security | Quiz 4 |
|  | Network Security | |
| 10 | Firewalls and VPNs | |
|  | *Study Guide and Review* | |
| 11 | **Final Exam: 06/8, Thursday 11:30am-1:45pm** | |

***This class schedule is subject to change as necessary during the quarter.***

**Preferred Name & Gender Pronouns:** Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the quarter so that I may make appropriate changes to my records. Please also note that students may choose to identify within the University community with a preferred first name that differs from their legal name and may also update their gender. The preferred first name will appear in university related systems and documents except where the use of the legal name is necessitated or required by university business or legal need. For more information and instructions on how to do so, please see the Student Preferred Name and Gender Policy at: https://offices.depaul.edu/secretary/policies-procedures/Pages/default.aspx.

**Regarding Academic Integrity:** This course will be subject to DePaul's Academic Integrity policy. You can find helpful information and plenty of resources on the Academic Integrity site. The university policy on plagiarism can be summarized as follows: Students in this course, as well as all other courses in which independent code writing, research or writing play a vital part in the course requirements, should be aware of the strong sanctions that can be imposed against someone guilty of plagiarism. If proven, a charge of plagiarism could result in an automatic F in the course and possible expulsion. The strongest of sanctions will be imposed on anyone who submits as their own work a report, examination paper, computer file, lab report, or other assignment which has been prepared by someone else. 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.

**Incomplete:** An incomplete grade is given only for an exceptional reason such as a death in the family, a serious illness, etc. Any such reason must be documented. Any incomplete request must be made at least two weeks before the final and approved by the Dean of the Jarvis College of Computing and Digital Media. Any consequences resulting from a poor grade for the course will not be considered as valid reasons for such a request. Students must have been making adequate progress in the class prior to the emergency in order to be eligible to apply.

**Students with Disabilities:** Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential.  To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at csd@depaul.edu.

**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.

**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.

**Students with Disabilities:** Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential.  To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at csd@depaul.edu.