

SYLLABUS

TDC 363-501

Intro to Local Area Networks

Winter Quarter 2018

Instructor: Greg Brewster
Class Time: Tu/Th 1:30 pm – 3:00 pm
Office Hours: Tu/Th 1:00 – 1:30 pm, 3:00 – 3:30 pm or by appointment
Phone: (312) 362-6587 (voice) (312) 362-6116 (fax)
Office: CDM 850
E-mail: gbrewster@cdm.depaul.edu
Prerequisite: IT 263 or TDC 261
E-Text: Cisco Networking Academy, <https://www.netacad.com>
Optional Text: **CCNA Routing and Switching Complete Study Guide**
by Todd Lammle, Sybex, 2016, ISBN 978-1119288282

Course Summary:

This course covers the principles of local area network (LAN) technologies including protocols, hardware, LAN software and design concepts. The course will focus on the lower layers of the OSI model and explore Ethernet, bridging/switching, VLANs, securing the network, Spanning-tree (STP) and Rapid-Spanning-tree protocols (RSTP). Basic routing using RIP and OSPF will also be investigated. The course will involve multiple lab exercises and troubleshooting activities to help reinforce the concepts.

Learning Outcomes:

1. Describe the devices and services used to support communications in data networks and the Internet .
2. Describe the role of protocol layers in data networks.
3. Describe the importance of addressing and naming schemes at various layers of data networks in IPv4 environments.
4. Design, calculate, and apply subnet masks and addresses to fulfill given requirements in IPv4 networks.
5. Explain fundamental Ethernet concepts such as media, services, and operations.
6. Build a simple Ethernet network using routers and switches.
7. Use command-line interface (CLI) commands to perform basic router and switch configurations.
8. Utilize common network utilities to verify small network operations and analyze data traffic.
9. Describe the purpose, nature, and operations of a router, routing tables, and the route lookup process.
10. Describe how VLANs create logically separate networks and how routing occurs between them.
11. Describe dynamic routing protocols, distance vector routing protocols (RIP) and link state protocols (OSPF).

12. Configure and troubleshoot static routing and default routing.

Coursework and Grades:

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

- a) 4 Homework Assignments (30%)
- b) 4 Lab Exercises (30%),
- c) Midterm exam (15%)
- d) Final Exam (20%)
- e) Class Participation (5%)

Further details on each assignment will be distributed in class. 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% | |

Late Assignments:

Some assignments will not be accepted late – this will be marked on the assignment. Any other assignments received late will be penalized as follows: up to 1 day late is 20% penalty; between 1 day and 2 days late is 30% penalty; between 2 days and 1 week late is 40% penalty; more than 1 week late results in no credit for the particular assignment. Homework assignments, labs and exams must be completed individually unless the assignment explicitly states that team work is permissible. Class attendance is essential since lectures may cover topics outside the text.

Class Schedule:

Class dates, topics, readings on Cisco Network Academy, and Assignments are shown below. Cisco Network Academy materials are split among 3 online courses: Intro to Networks (ItN), Routing and Switching Essentials (RSE) and Scaling Networks (SN).

Note: **you are not required to do any Activities or Labs on NetAcad** unless specifically stated, but you are encouraged to complete them for extra practice if you wish.

| <i>Date</i> | <i>Topics</i> | <i>NetAcad Readings</i> | <i>Assignments</i> |
|-------------|---|-----------------------------|--------------------|
| Jan. 2 | Network Fundamentals, Protocol Layers and Encapsulation | ItN 1.2-1.4, 3.1-3.3 | |
| Jan. 4 | Ethernet and Cabling | ItN 4.1-4.3.2, 4.4, 5.1-5.3 | |
| Jan. 9 | IP Addresses and Subnets | ItN 7.1-7.3, 8.1-8.3 | HW 1 out |
| Jan. 11 | Cisco IOS | ItN 2.1-2.3 | Lab 1 out; |
| Jan. 16 | Switching | RSE 1.2, 2.1-2.2 | |

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|---------|-----------------------------------|----------------------|------------------------|
| Jan. 18 | VLANs | RSE 3.1-3.2 | HW 1 due Lab 2 out |
| Jan. 23 | Inter-VLAN Routing, STP | RSE 5.1, SN 2.1-2.3 | HW 2 out |
| Jan. 25 | RSTP | | Lab 1 due 1/27 |
| Jan. 30 | Midterm Review | | HW 2 due by 1:30p |
| Feb. 1 | Midterm Exam | | |
| Feb. 6 | Etherchannel | SN 3.1-3.2 | Lab 2 due Lab 3 out |
| Feb. 8 | Static and Default Routing | RSE 4.1-4.3 | |
| Feb. 13 | Dynamic Routing | RSE 7.1-7.2, 7.4-7.5 | HW 3 out |
| Feb. 15 | RIPv2 | RSE 7.3 | |
| Feb. 20 | Open Shortest Path First (OSPF) | RSE 8.1-8.2 | Lab 3 due Lab 4 out |
| Feb. 22 | OSPF | | HW 3 due HW 4 out |
| Feb. 27 | Route Redistribution | | |
| Mar. 1 | Access Lines and WAN Services | | |
| Mar. 6 | WAN Protocols | | HW 4 due |
| Mar. 8 | Wrapup and Review | | Lab 4 due 3/10 |
| Mar. 15 | Final Exam: 11:30 AM – 1:45 PM | | |

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

Instructor and course evaluations provide valuable feedback that can improve teaching and learning. The greater the level of participation, the more useful the results. As students, you are in the unique position to view the instructor over time. Your comments about what works and what doesn't can help faculty build on the elements of the course that are strong and improve those that are weak. Isolated comments from students and instructors' peers may also be helpful, but evaluation results based on high response rates may be statistically reliable (believable). As you experience this course and material, think about how your learning is impacted. Your honest opinions about your experience in and commitment to the course and your learning may help improve some components of the course for the next group of students. Positive comments also show the department chairs and college deans the commitment of instructors to the university and teaching evaluation results are one component used in annual performance reviews (including salary raises and promotion/tenure). The evaluation of the instructor and course provides you an opportunity to make your voice heard on an important issue – the quality of teaching at DePaul. Don't miss this opportunity to provide feedback!

Academic Integrity and Plagiarism

This course will be subject to the academic integrity policy passed by faculty. More information can be found at <http://academicintegrity.depaul.edu/>.

The university and school policy on plagiarism can be summarized as follows: Students in this course 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 his/her own work any assignment which has been prepared by someone else. If you have any questions or doubts about what plagiarism entails or how to properly acknowledge source materials be sure to consult the instructor.

Withdrawal

Students who withdraw from the course do so by using the Campus Connection system (<http://campusconnect.depaul.edu>). Withdrawals processed via this system are effective the day on which they are made. Simply ceasing to attend, or notifying the instructor, or nonpayment of tuition, does not constitute an official withdrawal from class and will result in academic as well as financial penalty.

Retroactive Withdrawal

This policy exists to assist students for whom extenuating circumstances prevented them from meeting the withdrawal deadline. During their college career students may be allowed one medical/personal administrative withdrawal and one college office administrative withdrawal, each for one or more courses in a single term. Repeated requests will not be considered. Submitting an appeal for retroactive withdrawal does not guarantee approval. College office appeals for CDM students must be submitted online via MyCDM.

Incomplete

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.

CDM policy

requires the student to initiate the request for incomplete grade before the end of the term in which the course is taken. Prior to submitting the incomplete request, the student must discuss the circumstances with the instructor. Students may initiate the incomplete request process in MyCDM.

- All incomplete requests must be approved by the instructor of the course and a CDM Associate Dean. Only exceptions cases will receive such approval.
- If approved, students are required to complete all remaining course requirement independently in consultation with the instructor by the deadline indicated on the incomplete request form.
- By default, an incomplete grade will automatically change to a grade of F after two quarters have elapsed (excluding summer) unless another grade is recorded by the instructor.
- An incomplete grade does NOT grant the student permission to attend the same course in a future quarter.

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:
Student Center, LPC, Suite #370
Phone number: (773)325.1677
Fax: (773)325.3720
TTY: (773)325.7296

Student Attitude

A professional and academic attitude is expected throughout this course. Measurable examples of non-academic or unprofessional attitude include but are not limited to: talking to others when the instructor is speaking, mocking another's opinion, cell phones ringing, emailing, texting or using the internet whether on a phone or computer. If any issues arise a student may be asked to leave the classroom. The professor will work with the Dean of Students Office to navigate such student issues.

Civil Discourse

DePaul University is a community that thrives on open discourse that challenges students, both intellectually and personally, to be Socially Responsible Leaders. It is the expectation that all dialogue in this course is civil and respectful of the dignity of each student. Any instances of disrespect or hostility can jeopardize a student's ability to be successful in the course. The professor will partner with the Dean of Students Office to assist in managing such issues.

Cell Phones/On Call

If you bring a cell phone to class, it must be off or set to a silent mode. If you are required to be on call as part of your job, please advise me at the start of the course and you may step outside the classroom to take calls.