

**SYLLABUS**  
**BCIS 4680-001: Business Data Communications & Networking**  
**Monday 6:30 PM - 9:20PM BLB-050**  
**Spring-2026**

**Instructor:** Dipakkumar P Pravin, PhD, Office: BLB- 357B  
**Email:** dipakkumar.pravin@unt.edu, **Phone:** (940) 565-3757

**Professor's Zoom Office hours:**

Day & Time: Wednesday @ 11:00AM to 12:00 PM CST (or by appt)

Zoom Meeting ID: 550 363 5876 Password: 14221

Zoom-URL:

<https://unt.zoom.us/j/5503635876?pwd=SXRPZ3JVZWFabk92NXptYW83UHY4dz09>

**IA Names, Hours & Zoom:**

**IA:** TBD

**COMMUNICATION PREFERENCES:**

1. Use (ONLY) discussion board on Canvas for all course related questions!
2. Use Email, ONLY for specific personal/confidential questions, please use subject line prefix "**S26-4680-001**" <your topic>".
3. Please DO NOT SEND ME WhatsApp, Signal, Discord, GroupME, **Teams**, Messenger, or ANY social media messages.
4. Please DO NOT use Canvas Inbox or Canvas Email.
8. Please review communication guidelines at Online Communication Tips (<https://clear.unt.edu/online-communication-tips>)

**COURSE DESCRIPTION**

This course is a detailed introduction to computer networking and related aspects. The course will cover network architecture, its components, data flow, security, and network technology within the framework of a business environment. Topics include the layered implementation of TCP/IP networks, a few fundamental applications that allow a network to become "the internet", how (and if, or to what level) a network can be secured. The course will focus heavily on "hands-on" skill that a student gains besides the understanding of how a network works.

Why is this course important? Information systems have been the central nervous systems of any organization forever—technologies come and go, but the data/information remains. It is critical to efficiently move information within any business (or any human) enterprise, and it is the networks that provide the critical infrastructure for the entire human race to survive and thrive. Without networks our own survival will become extremely challenging—the recent pandemic has given a big warning about it.

This course will use the material that forms the basis of CompTIA's Network+ Certification. While the course **will not cover all the topics needed for Network+ Certification**, it will provide detailed knowledge of the networking and related technologies. This **elective** course is meant for those wanting to become Information Systems and Technology experts. The course will help students decide if they want to pursue networking as their expertise or not and in the process, it will give fundamental insights about networking technology and issues that every Information Systems and Technology professional must understand.

## Course Learning Objectives

By the end of this course, students will be able to:

1. Describe the architecture of TCP/IP Networks, including addressing schemes, network flows & networking devices.
2. Explain how a network is implemented and related applications to make it work, e.g. DNS, DHCP, PING, etc.
3. Explain how small networks are joined together to make the Internet.
4. Understand how to make a network safe. Question: why is network not safe to begin with?
5. Understand what a "cloud" is.

## PREREQUISITES

The MOST IMPORTANT prerequisites are the *ability to reason, get work done on time, and ask questions*. Did we mention that the ability to *ask questions* is a prerequisite? If not, here it is again: "*ability to ask questions is a prerequisite*". Please do develop, borrow, buy, steal, learn to pretend, or somehow acquire a habit of asking *questions*!

While the course assumes no specific knowledge of any specific technology, it is important that the student be conformable with using a computer and specifically the command line applications. Specifically, if you can use "Command Prompt" on windows (or terminal on Mac) to do the following, you are in a good position to start this course, else figure it out:

- a. Find current directory
- b. Create a file
- c. List all files in a directory
- d. Copy a file
- e. Read the contents of a file
- f. Delete a file
- g. Create a directory
- h. Change your current directory.

## Software & Web Sites for the course.

### Software required:

- We will be using a specific virtual machine for our course that is provided on the college of business (RCoB) network.

### Websites:

- For any external website, **the best practice is to use your personal email** so that you can retain the access, if need be, after the class or your education is over.
- Access to CompTIA Network+ (N10-009) <https://www.ucertify.com/p/network-plus-n10-009.html> is **required** for this course. More details about purchasing the course will be available during the first week of the classes.
- At the uCertify.com site, the entire e-book is available and besides, ucertify.com will be used for regular quizzes and some lab work. The grades from the site will be integrated back to the Canvas course.
- The final **discounted** price for you (the student) for this course for 4 months access is **\$85.00**. However, if anyone is unwilling or unable to get access to the course, please contact the instructor ASAP.
- Please DO NOT BUY directly, we will share **discounted** access code in the class.
- Physical copy of the book is NOT required, IMHO.

### Course Canvas Site:

- Course announcements and additional course materials will be posted on Canvas.
- Canvas is available through a mobile App, it's a very useful app and highly recommended.

#### General technology needs:

Students are required to have a personal computer and bring it to the classroom. Inside the entire UNT campus students have excellent Wi-Fi access.

- Install UNT's Respondus browser on the laptop/desktop from UNT Recommended site (<https://download.respondus.com/lockdown/download.php?id=165715487>.)
- Install Zoom app on laptop/desktop and optionally on your smart phone or other suitable devices **and test it out\*\***.
- **\*\*As student of Information Systems, please get into the habit of testing any new hardware or software element you ever acquire—and if you are responsible for others then make sure that they are testing their newly acquired elements to your satisfaction.**

#### **Rules of Engagement**

Rules of engagement refer to the way students are expected to interact with each other and with their instructors online or offline. Here are some general guidelines:

- Treat your instructor and classmates with respect in email or any other communication.
- Unless specifically invited, do not refer to your instructor by their first name.
- Use clear and concise language.
- Remember that all college level communication should have correct spelling and grammar (this includes discussion boards and emails).
- Avoid slang terms such as “wassup?” and texting abbreviations such as “u” instead of “you.” Why? Well, such terms may not be known or understood universally.
- Use standard fonts such as Ariel, Calibri, or Times new Roman and use a size 10 or 12-point font.
- Avoid using the caps lock feature AS IT CAN BE INTERPRETTED AS YELLING.
- Be cautious when using humor or sarcasm as tone is sometimes lost in an email or discussion post and your message might be taken seriously or sound offensive.
- Be careful with personal information (both yours and other's).
- Do not send confidential information via e-mail

See these Engagement Guidelines <https://digitalstrategy.unt.edu/clear/online-communication-tips.html>) for more information.

### COURSE SCHEDULE

The topics, assignments and dates given in the syllabus **are subject to change**. All necessary changes will be announced in advance. You are responsible for being aware of such changes.

| Week | Date     | Topics and Readings                                                                                                                                             | Deliverable  |
|------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 1    | Jan-12   | Course overview / Introductions / chit-chat<br>Access Course VM, Run a few commands                                                                             | Attend Class |
|      | Jan-19   | NO-CLASS: Martin Luther King Holiday                                                                                                                            |              |
| 2    | Jan-26   | Ch 1 The OSI Model and Encapsulation                                                                                                                            | HOIC-1 Due   |
| 3    | Feb-02   | Ch 2 Network Topologies and Types                                                                                                                               |              |
| 4    | Feb-09   | Ch 7 IP Addressing (Basics), Binary Numbers                                                                                                                     | Lab-1 Due    |
| 5    | Feb-16   | Ch 7 IP Addressing (Advanced)                                                                                                                                   |              |
| 6    | Feb-23   | Ch 5 Various Network Devices: Hub, Switch & Router                                                                                                              |              |
| 7    | Mar-01   | Ch 8 IP Addressing (Subnetting)                                                                                                                                 |              |
|      | Mar 9-15 | <b>SPRING BREAK</b>                                                                                                                                             |              |
| 8    | Mar-16   | <b>Midterm Exam</b><br>(MCQ: Ch. 1, 2, 5, 7, 8<br><b>100</b> Questions, 200 points, 2 hours)<br>Lockdown Browser with WebCam<br>Exam Questions are Copyrighted. |              |
| 9    | Mar-23   | Course Checkpoint: Review Exam, Labs<br>Ch 6 TCP/IP, Common Ports and Protocols<br>Part-1                                                                       |              |
| 10   | Mar-30   | Subnetting Review<br>Ch 16 Common Security Concepts                                                                                                             |              |
| 11   | Apr-06   | Ch 6 TCP/IP, Common Ports and Protocols<br>Part-2<br>Ch 9, 10 Selected Topics: IP Routing,<br>Routing Technologies, and Bandwidth<br>Management                 |              |
| 12   | Apr-13   | Ch. 21 Data Center Architecture & Cloud<br>Concepts (21.1 to 21.5 only)                                                                                         |              |
| 13   | Apr-20   | Ch 17 Common Types of Attacks (Top 7<br>selected attacks)<br><b>Review for the Final &amp; Hands-on Exam</b>                                                    |              |
| 14   | Apr-27   | <b>Final Exam</b><br>(MCQ: Comprehensive, <b>100</b> Questions, 200<br>points, 2 hours; Lockdown Browser)<br><b>Exam Questions are Copyrighted.</b>             |              |
| 15   | May-04   | <b>Hands-on Exam</b><br>60 Minutes, 4 Questions, 20 points<br><b>EXAM ROOM: TBD</b><br><b>Exam Questions are Copyrighted.</b>                                   |              |

## COURSE ASSIGNMENTS AND EVALUATION

Instructor may invite randomly selected team and/or individual student to meet over zoom or in person (based on both parties' convenience). The purpose of the meeting will be to give the team or a student an opportunity to explain their responses to submitted work to earn grades. If the team or student fails to explain their responses/work or fails to come to the meeting, they may lose all earned points for that activity and may be subject to further penalty or investigation(s) of their prior work and may even be reported for academic integrity violations which may result in action leading up to removal from the course.

In other words, above paragraph states **that the instructor may challenge a team or an individual student to prove that the responses/work submitted is their own** and if they fail to do so then the team or individual student may be subject to further investigation.

Course EXAMS, QUIZ and other evaluation related material is COPYRIGHTED—DO NOT RECEIVE, OR DISTRIBUTE such material, any such incidence is a violation, and YOU WILL BE SUBJECTED TO VIOLATION PENALTY.

Your performance will be evaluated as follows:

| Assignments  |                                                                                            | Points     |
|--------------|--------------------------------------------------------------------------------------------|------------|
| Individual   | 2 Chapter Quizzes: each 10 points, Ch 1, 2                                                 | 20         |
| Individual   | 7 Chapter Reviews: each 10 points, Ch 1, 2, 7, 8, combined 9 & 10, Combined 16 & 17, Ch 21 | 70         |
| Individual   | AWS Educate 5 units, 5 points each                                                         | 25         |
| Team         | 2 Labs, each 10 points                                                                     | 20         |
| Individual   | 6 HOIC, Hands-on In-Class each 5 points                                                    | 30         |
| Individual   | Peer Review**                                                                              | 10         |
| Individual   | Hands-on Exam (5 questions each 5 points, 90 minutes)                                      | 25         |
| Individual   | Mid-Term Exam (100 Questions each 2 points)                                                | 200        |
| Individual   | Final Exam (100 Questions each 2 points)                                                   | 200        |
| <b>TOTAL</b> |                                                                                            | <b>600</b> |

\*Bonus points may be announced, at the instructor's discretion but not guaranteed. The total bonus points opportunities will not be more than 15-25 points. For any bonus points there will be NO MAKE-UP opportunities.

\*\* Peer review points earned by an individual will be the average of earned points from the other team members. Those who do not submit evaluation for their peers will earn 0 (zero) points for themselves.

### Grades will be assigned as follows:

The letter grading scale (A-F) is based on the total numerical points earned (including any bonus points) or class rank whichever is better for the student., however the letter grades are decided based on the 620 points scale.

A = 540+ OR top 30% based on total enrolled (after last date to drop)

B = 480--539 OR Next 45% based on total enrolled (after last date to drop)

C = 420-479 OR Next 17% based on total enrolled (after last date to drop)

D = 360-419 OR Next 4% based on total enrolled (after last date to drop)

F = 0-359 OR Bottom 4% based on total enrolled (after last date to drop)

Under rare circumstances, instructor may apply some curve and/or offer opportunity to earn bonus points. Bonus points opportunities may be sporadic, announced at the last moment, and available for a limited time—there are NO make-up opportunities if you miss such bonus points opportunities.

### Interviews

I reserve the right to interview anyone to discuss their work submission to the class. The primary idea is to give everyone an opportunity to show that they understand the work they have submitted! This helps remove any doubts that someone is getting the work done by someone else submitting as their own. Any adverse findings here will be considered violation of academic integrity policies of the University.

### Homework assignments

There will be 3 homework/lab assignments as outlined above, all are team based. As a part of the class, you will work on a three (3) person team. All labs will be of a technical nature and may include installation and configuration of SW, writing queries, and the use of various computing tools. Some of the homework assignments will need to be submitted using Turnitin and will be checked for proper attribution and citations of source materials and **plagiarism**.

### Quizzes

There will be 9 quizzes designed to check students' understanding of the module material and to promote student engagement. Quizzes will be timed, contain a variety of closed and (sometimes) open-ended questions, and reflect the content of assigned module readings and end-of-module assignments. Quiz questions will generally be similar but easier than exam questions. All quizzes need to be answered individually without help from other students—this is to benefit one's own learning. Each quiz allows 2 attempts, and the best score will be the final score. In-class assignments (if any) may be individual or group assignments, with students forming ad hoc groups for each assignment. In-class assignments will be submitted by the group during the class.

### Managing teamwork.

Working as a part of a team is a necessity in today's world, so learning to be part of a team is an essential component of this course and it is a required part of the course work.

Students will become part of a team of their own choice in the first week of the class. Instructor will help form a team if someone is having difficulty joining/forming a team. All team members are expected to contribute equitably to the project. It is up to the team to determine equitable distribution of responsibilities for the project. If a team member is not actively contributing to the project, the team is allowed to fire a team member at any time **before the Lab-1 is due**. Each team will choose a team leader, but the team leader has no special privileges except the responsibility to keep the team together. To fire a team member, the team should first issue a warning to the non-contributing team member which clearly states the expectations of contributions, followed (no less than one week later) by a firing notice signed by all remaining team members sent to the team member and the instructor. A team member fired from a team will not receive credit for any assignments submitted by the team after the date of "firing". Similarly, a team member can elect to quit a team following a similar process. A team member fired by a team or voluntarily leaving the team may team up with other "unemployed" student(s).

Individual submissions are DISCOURAGED but may be rarely allowed in documented exceptional circumstances with prior approval. The instructor will allow anyone to join or form

a new team after assignment-1 is submitted. Thus, assignment-1 should be considered, for a group of individuals, as a practice and test run of becoming a team.

**Peer Review Bonus Points:** At the end of the semester, each team member submits a peer evaluation document reflecting their score of all other team members BUT not for themselves. The instructor will average those scores for each individual member and assign the final peer review bonus points to everyone. The instructor reserves the right to set aside any earned points and assign as little as 0 (zero) to a student as they see fit. *Those who do not submit score for their peers will earn 0 (zero) points for themselves.*

## Exams

There will be a mid-term exam and a final exam. Both exams will be administered as indicated in the schedule. An exam WILL require the use of a laptop with a Respondus lockdown browser and a WebCam. Students would need to use their own laptop for the exam. Laptops are available for check out from UNT libraries. No make-up exams will be given with the exception of cases of documented medical or family emergency or some extra ordinary circumstances beyond one's control.

**For all exams using online proctoring tools (e.g., LockDown Browser), you will be asked to show a thorough 360-degree view of your exam environment.** If for any reason, you are unable or unwilling to do provide a 360-degree view of your environment, your exam results will be withheld pending 1-on-1 over zoom review of the exam with the instructor.

## COURSE POLICIES

### Late Submission Policy

All quizzes, assignments, HomeWorks, projects, reviews are due at the time indicated in the schedule. **There is NO exception** to this policy except for documented medical or family emergencies or some extra ordinary circumstances beyond one's control.

### Student email information

Enabling students' access to certain web or cloud computing resources used in this class requires releasing student UNT email information to cloud providers and affiliated parties. It is your responsibility to notify the instructor within 5 days from the beginning of the semester if you DO NOT want your email information to be released. In such case, you assume the responsibility for procuring access to the necessary cloud resources.

### Professional Communication

Students will communicate with the instructor verbally and in writing using professional language. All written communication will be composed using proper grammar and spelling. All course content related, and other technical questions and comments are to be conducted only via the discussion boards set up on Canvas. Use direct emails (NOT CANVAS) for questions or comments of personal nature (not on canvas). All student emails to the instructor will be sent from the student's official UNT email with a subject line starting with: **S26-4680-001: <Type of concern>.** *Emails sent in violation of these guidelines will be ignored.* All grade related questions and concerns need to be communicated in writing over email (not on canvas) with the subject line: **S26-4680-001: Grade Concern.** Any grade-related emails should only contain information relevant to the grade in question. Any references to your grades in other courses, or the impact of the grade on your overall academic standing are irrelevant and will result in the grade concern being dismissed.



### **Class attendance and participation**

This is an in-person class, and attendance is mandatory. There may be some surprise quizzes and/or in-class assignments. If you miss any in-class work, then there will be no make-up except in the case of UNT approved exception.

### **Student conduct**

Students are expected to behave in a respectful and professional manner when in class and when interacting with the instructor and other students. Talking in class during the lecture is very disruptive even when done at a low voice. If you want to contribute or ask a question, please raise your hand. Students engaging in disruptive behavior, including talking during the lecture without explicit permission, will be asked to leave the classroom resulting in an absence and a corresponding grade penalty as described in the section on attendance. Disruptive students, including those talking in class without permission of the instructor, who refuse to leave the class will incur grade penalties up to a failing grade in the course, will be reported to the Dean of Students, and may be forcefully removed from the classroom by the UNT police.

### **Health-related absences**

Students are expected to attend class meetings regularly and to abide by the attendance policy established for the course. If you cannot attend a specific class section due to health-related reasons, it is important that you communicate with the me prior to being absent so that we can discuss and mitigate the impact of the absence on your attainment of course learning goals. If you experience a medical emergency that may result in more than one absence or inability to submit assignments on time, please notify the Dean of Students and the instructor as soon as possible to minimize the impact on academic standing.

### **Class Recordings & Student Likenesses**

I may record class lectures and presentations and may provide access to recordings to students who miss a class due to a medical or health reason. Class recordings are the intellectual property of the university or instructor and are reserved for use only by students in this class and only for educational purposes. Students may not post or otherwise share the recordings outside the class, or outside the Canvas Learning Management System, in any form. Failing to follow this restriction is a violation of the UNT Code of Student Conduct and could lead to disciplinary action.

### **Penalty for academic integrity violations**

Students found to be in violation of academic integrity standards will incur penalties ranging from a failing grade of a specific assignment to a failing grade in the course. Cheating on an exam or assisting others in cheating, misrepresenting others' work as your own, and severe plagiarism (over 30% similarity on the project) will result in a grade of **F** in the course. All academic integrity violations will be reported to the Academic Integrity Office.

## **COLLEGE OF BUSINESS AND UNIVERSIY POLICIES AND PROCEDURES**

### **Academic Integrity Standards and Consequences**

According to UNT Policy 06.003, Student Academic Integrity (available at <https://vpaa.unt.edu/fs/resources/academic/integrity> ), academic dishonesty occurs when students engage in behaviors including, but not limited to: cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty



may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.

Additional information regarding RCOB and ITDS academic integrity policies and practices will be posted on the Canvas site. All students are expected to sign and submit a copy of ETHICAL BEHAVIOR IN ITDS CLASSES form.

### **Acceptable Student Behavior**

Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The university's expectations for student conduct apply to all instructional forums, including university and electronic classroom, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at <https://deanofstudents.unt.edu/conduct>.

### **ADA Accommodation**

UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodation at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website at <http://disability.unt.edu>

### **Student Evaluation Administration Dates.**

Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The survey will be made available during weeks 13, 14 and 15 of the long semesters to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via IASystem Notification" (no-reply@iasystem.org) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey, they will receive a confirmation email that the survey has been submitted. For additional information, please visit the SPOT website at [www.spot.unt.edu](http://www.spot.unt.edu) or email [spot@unt.edu](mailto:spot@unt.edu).

### **Emergency Notification & Procedures.**

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Blackboard for contingency plans for covering course materials.

### **Emergency Evacuation Procedures for Business Leadership Building**

**Severe Weather.** In the event of severe weather, all building occupants should immediately seek shelter in the designated shelter-in-place area in the building. If unable to safely move to the designated shelter-in-place area, seek shelter in a windowless interior room or hallway on the lowest floor of the building. All building occupants should take shelter in rooms 055,

077, 090, and the restrooms on the basement level. In rooms 170, 155, and the restrooms on the first floor.

**Bomb Threat/Fire.** In the event of a bomb threat or fire in the building, all building occupants should immediately evacuate the building using the nearest exit. Once outside, proceed to the designated assembly area. If unable to safely move to the designated assembly area, contact one or more members of your department or unit to let them know you are safe and inform them of your whereabouts. Persons with mobility impairments who are unable to safely exit the building should move to a designated area of refuge and await assistance from emergency responders. All building occupants should immediately evacuate the building and proceed to the south side of Crumley Hall in the grassy area, west of parking lot 24.