

**Course Syllabus****(In-Person + Online)****Business Data Networking**

COE 331

Instructor Information

Instructor	Email	Office Location	Phone/Extension
Abdulhakim Sabur	asabur@taibahu.edu.sa		

Office Hours (Online):

Sunday

Monday

By Appointment

Tuesday

Wednesday

Thursday

Notes:

Please email me if you did not find me in the office or to arrange appointments.

Course Information

Semester	Credit	Pre-Requisites	Co-Requisites	Required Software/Equipment
Fall 2023	3 Hours	IS 203	N/A	VBox, Virtual Machines, Packet Tracer



Course Description

This course investigate the foundations of computer and data networking by taking a top-down approach. We are first going to study networking fundamentals including LANs, MANs, WANs, the Internet, intranets, extranets and the WWW, with the focus being the Internet. The topics covered include network topologies, architecture and protocols. Firewalls and reliability; systems integration; network monitoring and management. The main objective of this course is to develop an understanding about what technologies and tools to leverage in order to secure a network properly against commonly known threats.

Course Objectives

Having successfully completed this course, the student will be able to:

- 1. Describe network topologies and architectures.**
- 2. Describe the TCP/IP stack and the ISO protocol suite.**
- 3. Describe the structure and different types of web-based protocols.**
- 4. Describe how the http protocol works.**
- 5. Describe cookies, proxies, and caching.**
- 6. Recommend web client-side and server-side programming**
- 7. Have a basic understanding of network security tools and appliances.**
- 8. Describe modern data networking models through independent research.**



Course Learning Outcomes

Code	Course Learning Outcomes	PLO code	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Define key principles used for data communication in computer networks.		Lecture Reading Assignment Lecture Reading Assignments	Exams Quizzes Homework Assignment
1.2	Identify the evolution of early networks and the Internet			
1.3	Describe the hierarchical, layered structure of typical network architecture			
1.4	Explain the important network standards in their historical context.			
2.0	Skills			
2.1	Develop skills in applying theoretical concepts in the analysis of practical networking case studies.		Lecture Group discussion Case Studies	Exams Quizzes Homework Assignment
2.2	Design and develop a security solution to address a particular cyber security challenge for a given IT domain.		Lecture + Lab	Exam + Lab
2.3	Justify how different roles and responsibilities of clients and servers for a range of possible applications		Lectures Solved Examples Case Studies	Exam Assignments
3.0	Values, autonomy, and responsibility			
3.1	Work effectively in groups and exercise leadership when appropriate.		Group discussion Discussion forums mathematical/statistical tools /demos Lab projects	Project Presentation Lab
3.2	Act responsibly in personal and professional relationships Act responsibly in personal and professional relationships		Lecture Lab Projects	Project/lab evaluations
3.3	Communicate effectively in oral and written form			Presentations
3.4	Use information and communication technologies (such as OSI Model)			Exam Assignment

**Course Materials****Required Text****Required Material - 1:**

J. FitzGerald, "Business Data Communication and Networking", 14th Edition, Wiley, 2021.

Supplementary Reading

- 1- W. Stallings and T. Case, "Business Data Communications- Infrastructure, Networking and Security", 7th Edition, Prentice Hall, 2012.
- 2- C. White, "Data Communications and Computer Networks: A Business User's Approach", 7th Edition, Course Technology, Cengage Learning, 2013.

Assessments and Grading

Assessment	Weight	Date/Frequency of Evaluation
Labs	10%	End of fourth week
Presentations	20%	Mid-Semester
Final Exam	40%	End of Semester
Midterm Exams	30%	Mid of Semester
Total	100%	

Academic Policies**Academic Integrity Policy**

- Academic misconduct is a violation of the Taibah University regulations and will not be tolerated. Academic misconduct includes any form of cheating such as fully or partially copying answers in exams and/or assignments, plagiarism, or submitting any work that is authored by the student himself/herself. Such violations will result in a grade of F for a test/assignment and/or the course. In some cases, academic misconduct may result in suspension or expulsion from the University.
- Use of cellphones, laptops, tablets or any other electronic device is not allowed during the class except for class activities with the instructor supervision and approval.

Attendance Policy

As per the regulation of the Ministry of Education, the following attendance policy will be applied:

Percentage of Absences to Total Number of classes	Corresponding Number of Classes	Action Required
=10%		First Warning
=15%		Second Warning
> 25		DN Provided



- A student is marked late if he/she attended the class 10-15 minutes late.
- A student who is more than 15 minutes late will be marked absent even if he/she attended the rest of the class.
- Every three lates count as one absence.

- The “DN-Notice” email is sent when student absence exceeds 25%, and accordingly:
 - i. The student has the right to review his/her absence record with the course instructor and discuss reasons of absenteeism with the instructor and the HoD.
 - ii. The HoD may reject the DN grade if the student reasoning and/or course performance are convincing.
 - iii. The student has the right to file an appeal for the College Council no later than the two weeks before the exam period to reject the DN grade. Students who filed an appeal of the DN grade have the right to sit in class and participate in all class activities till the decision is declared.

Please note: Absence-Warnings and DN-Notices are valid even if the student did not check, see, or reply to the emails. It is the student sole responsibility to regularly check his email and to refer to the IT department in case there is any technical issues.

Exams Policy

- Students who miss any exam (first major, second major, midterm, and/or final) with a valid excuse should submit formal proofs to the course instructor/coordinator within 48 hours of their return to study.
- The course instructor/coordinator prepares a list of all students who missed the exam with their excuses, and submits that to the Head of Department for approval. The document submitted for approval should state the time and date of the make-up exams for all the students.
- A student who does not submit his/her formal excuse documents within 48 hours of his/her return to study, his/her excuse will not be considered, and the student will not be allowed to attend the make-up exam.

Online Classroom Rules

- General communication between the instructor and students or among students should take place in “Posts” in the Class Blackboard group.
- The “Posts” in Blackboard is a space to get support from the instructor or from your classmates. In “Posts”, you can teach and learn. You may also post inquiries about the assignments. Please use the “Posts” effectively, and share thoughts/material that are related to the class, exclusively.
- Private communication whether personal, interpersonal, or professional will be handled via individual email or via the communication features (voice, video, messages) in the Blackboard group.
- Please mute your mics during the class to avoid any distortion to the instructor or to the classmates. If you need to say something, un-mute your mic, speak up, then mute your mic again.
- Assignments/Tasks are posted on Blackboard with comprehensive details about completion and submission.
- Due date and time for submission of each assignment/task/quiz is specified in Blackboard.

Instructor Class Rules

- **Attendance:** Students are required to attend both the lecture classes and the laboratory periods, and to be prepared to answer pop questions based on class material.



- **Submission of Assignments:** All written documentation and answers to questions pertaining to a laboratory assignment **must** be submitted using **PDF format**. All assignments are to be completed individually and are due as specified in the handouts. However, some of the assignments may require working as a team of two or more. **PLEASE NOTE, UNDER NO CIRCUMSTANCES WILL THE INSTRUCTOR TOLERATE PLAGIARISM OR COPY/PASTING FROM ONLINE RESOURCES OR BOOKS OR FROM OTHER STUDENTS.**
- **Quizzes:** Popup quizzes can happen in the start of the class or the end of the class. There can even be 2 quizzes in a class.
- **Exams:** Exams will occur during the normal lecture class period. There will be a single two-hour midterm exam during the semester and a three-hour final exam.
- **Presentations:** The purpose of the presentations is to help the student enhance his/her soft skills, as well as improving his/her research skills. The topics of the presentations is going to be decided 2 weeks in advance. The presenting students will be selected randomly by the instructor. Every student should make a **max of 8 MIN presentation + 2 MIN for Q&A**. The details of the presentations will be discussed later in the class.
- **Labs:** There will only be 6 technical labs for this course. In the remaining lab slots, the instructor will monitor the students' progress towards the course project. The students will be able to discuss problems with the instructors without having to wait and will be given feedback in real time. The objective of the labs time is to ensure that the students do a top-notch project and make progress consistently throughout the course.

Course Outline

Week No	Date	Subject	Lab	Assignment
1	27-8	Ch1 - Intro	Lab 1 (Packet Tracer)	Read the syllabus
2	3-9	Ch2 - App Layer	Presentation on selected topic.	
3	10-9	Ch2 - App Layer	Presentation on selected topic.	
4	17-9	Ch3 – Physical Layer	Lab 2 (Network Cabling)	
5	24-9	Ch4 – Data Link Layer		
6	1-10	Ch5 – Network and Transport Layer	Lab 3 (Basic protocols)	
7	8-10	Ch5 – Network and Transport Layer	Lab 4 (application protocols)	
8	15-10	Midterm Exam		
9	22-10	Ch6 - Wired and Wireless LAN	Presentation on selected topic.	
10	29-10	Ch 8&9 WAN and Internet	Presentation on selected	

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			topic.	
11	5-11	Ch8&9 WAN and Internet		
12	12-11	Ch10 Network Security	Lab 5 (Firewall and network security)	
13	19-11	Fall Break (No classes)		
14	26-11	Ch10 Network Security	Lab 6 (Firewall and network security)	
15	3-12	Ch11&12 Network Design & Management	Presentation on selected topic.	
16	10-12	Selected Topic	Presentation on selected topic.	
17	17-12	Final Exams Week		