Prince Sultan University
College of Computer and Info Sciences / Department of Computer Science
Term 261
1st Semester 2026-2027

COURSE SYLLABUS

Mission Statement of the Bachelor of Computer Science Program(s): Provide high-quality computer science education to prepare top graduates through an environment that promotes innovative thinking, ethical behavior, lifelong learning, research, and service to the community.

1. Course number and name: CS331, Data Communications and Computer Networks

2. Credits and contact hours: 3 (3,1,0)

3. Instructor's name: Dr. Sahar Amir
   a. Scheduled Office Hours:
      Sunday: 9:00–11:00 AM
      Monday to Wednesday: 9:00–10:00 AM
   b. Office Location: Bld#101 Office#W311
   c. Email: szahmed@psu.edu.sa

4. Textbook, title, author, and year:
   Behrouz Forouzan, Data Communications and Networking, with TCP/IP protocol suite, Sixth Edition. McGraw Hill (Main Textbook), 2021.
   Other References: Computer Networking: A Top-Down Approach (7th Edition), Pearson, 2016
5. Course Website [*Optional*]:
   Learning Management System: Moodle available at https://lms.psu.edu.sa

6. Specific course information
   Brief description of the content of the course (catalog description):

   This course introduces the basic concepts in data communication and computer networks. Topics covered include the nature of data communication, characteristics of computer networks, the ISO-OSI network protocol layers, topologies and models, error detection and correction codes, and network performance considerations.

7. Prerequisites or co-requisites: CS175, CS210
   CS 331 is required as a Core course in CS/SE/IS programs.

8. Specific goals for the course
   The student will be able to:
   CLO1: Describe how communication works in data networks and the Internet in reference to the OSI and TCP/IP models.

CLO2: Describe the services and features of the various layers of TCP/IP and their relevant network devices.

CLO3: Produce a network design solution based on a real-life network problem.
CLO4: Develop the ability to design, calculate, and apply subnet masks and addresses to fulfil networking requirements
CLO5: Use simulators and analysis tools such as Cisco Packet Tracer and Network Protocol Analyzers (NPA).

9. The course addresses ABET CS-SOs 1,2,6 & SE-SOs 1, 2,6

Course LOs #	Student Outcomes		
	Computer Science	Information Systems	Software Engineering
1	1	1	1
2	1	1	1
3	2	2	2
4	2	2	2
5	6	2	6

10. Brief list of topics to be covered

Week No.	Topics	CLO(s) alignment	Assessments
Week 1-2 9 Aug – 22 Aug	Overview of Data Communications and Networking	1	Quiz1, Final Exam Projects
Week 3-4 23 Aug – 5 Sep	Physical Layer	1,2,5	Quiz 1, Major I Final Exam Projects
Week 5-8 6 Sep – 26 Sep	Data Link Layer Major 01– 9th Sep 2026	2,5	Quiz 2, Major I, Major II Final Exam
Week 8 – 9 27 Sep – 10 Oct	Ethernet		
Week 10	Interconnecting Devices	1,2	

11 Oct – 17 Oct			
Week 11-12,13 18 Oct – 7 Nov	Network Layer Major 02 – 2nd Nov 2026	2,3,4,5	Quiz III, Major II, Project, Final Exam
Week 14 8 Nov – 14 Nov	Transport Layer	2,5	Quiz III, Major II, Final Exam, Project
Week 15 15 Nov – 19 Nov	Application Layer + Review	2,5	Quiz III , Major II, Final Exam, Project

11. Weight of Assessments

- Final Exam – 40%
  Final: Nov 22, 2026
- Major Exams (1 & II) – 30% Major I - Week 8, Major II – Week 18
  - Major I: Sunday, Sep 9, 2026, 12:00 pm – 1:00 pm
  - Major II: Sunday, Nov 2, 2026, 12:00 pm - 1:00 pm
- Quizzes (I & II & III (online)) – 10% - Best two quizzes
- Attendance 5%
- Assignments bi-weekly offline or online (LMS graded) assignments - 7%
- One Wireshark lab (**3** Marks), and two Packet Tracer projects (**5** Marks each) - 8%

9. Additional Information

Plagiarism and Academic Dishonesty: "Plagiarism can be defined as unintentionally or deliberately using another person's writing or ideas as though they are one's own. Plagiarism includes, but is not limited to, copying another individual's work and taking credit for it, paraphrasing information from a source without proper documentation, and mixing one's own words with those of another author without attribution. In addition, buying a paper or project, or downloading a paper from the Internet, and submitting it as your own are also plagiarism. The penalty for academic dishonesty will bring course expulsion and failure, or even suspension" (Academic Integrity and Syllabus Acknowledgement Form).

Attendance Policies: The University attendance policy will be strictly followed. Students are expected to attend all class sessions and be in class on time. Missing a class session is a student's responsibility. Missed classes will not be repeated. **A total of 16 absences may lead to a denial grade DN**. It is the student's responsibility to periodically check the course website/Moodle for course content, project assignments, updates, and notifications.

Attendance Marks will be computed according to the following table:

Number of absences	3 or less	4	7	10	13	15
Deducted Mark out of 5	0	1	2	3	4	5

Exam Policies: It is not possible to reschedule a major exam. If any student missed an assessment, the makeup will be at the end of the semester, and all the materials are included (comprehensive assessment). The makeup exam will only be approved in limited cases as stipulated in the university bylaws. Generally, the final exam includes all material covered during the semester (comprehensive).

Assignment/Project Policies: Students are expected to submit assignment/projects based on the deadline. Late assignments/projects are not accepted.