**Network Design**

**Fourth Year – First Semester**

**Information Technology Department**

**Asst. lecturer. Ahmed Salahalddin Muhammed**

**Academic Year: 2024 – 2025**

**Course Book**

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Information** | **Details** |
|  | **Course Name** | Network Design |
|  | **Course Code** | CE401CN |
|  | **Lecturer In-charge** | Ahmed Salahalddin Muhammed |
|  | **College/Department** | College of Engineering & Computer Science / Department of Information Technology |
|  | **Contact Information** | E-mail:ahmed.salahaddin@lfu.edu.krd  Mobile No.: 0964-750 430 4382 |
|  | **Time (in hours) per Week** | Theory:2  Practical: 2 |
|  | **Office Hours** | 8:30 AM-3:00PM |
|  | **Teacher’s Academic Profile** | • 2021-2022: MSC in College of Engineering and Computer Science/ Department of Information Technology from Lebanese French University.  • 2016-2017: BSC in information technology from Lebanese French University. |
|  | **Academic Title** | Assistant Lecturer |
|  | **Keywords** | Internet addressing protocols  Transport Layer  Application Layer  WWW & Domain Name System |
|  | **Course Overview:**  This course provides general knowledge on data communication and computer networking. It deals with data communication concepts and techniques. It will provide detailed knowledge on the transport-layer protocols in the Internet: UDP, TCP, and SCTP. The students will learn about standard client-server programming in the Internet. This course also introduces Internet Protocols transport layer security and application layer security. | |

|  |  |
| --- | --- |
| **12.** | **Aims & Objective:** Learning Objectives includes  Upon completing this course, students will:  To learn the design principles of data communication and computer networks  To learn about WWW and DNS  To understand layered protocol architecture (OSI, TCP/IP)  To understand and apply Internet addressing protocols and Internet management protocols |
| **13.** | **Course Requirement:**  The tasks assigned to the students in this article are to attend weekly theoretical and practical lectures, as well as to assign the students to the theoretical, practical aspect and to complete the reports on the material. |
| **14.** | **Teaching and Learning Method:**   * Book, Data Show and PowerPoint, white board, Lectures, homework’s, and assignments. |
| **15.** | **Assessment Scheme:**   * 5 % Attendance * 10 % Class Tests and Quizzes * 25 % Mid-term Examination * 10 % Practical Exam * 50 % Final Examination |
| **16.** | **Students Learning Outcome:**  Students will:  After completing the course, students are expected to:  - Identify Internet addressing methods  - Identify the TCP and UDP usage.  - To recognize the WWW structure.  - Identify the Domain Name levels. |
| **17.** | **Course Reading List and References**  **Textbooks**   * 1. Data Communications and Networking, Behrouz A. Forouzan, McGraw Hill Education, 5th Edition.   2. Computer Networks, Andrew S. Tanenbaum, David J. Wetherall, Pearson Education, 5th Edition.   3. Computer Networking – A Top Down Approach, James F.Kurose, Keith W. Ross, Pearson Education, 6th Edition |
| **18.** | **Course Content** |

**Course Content**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No** | **Lecture Date** | **No. of Hours** | **Topics** |
| 1. | Week 1 | 4 | Introduction about networking |
| 2. | Week 2 | 4 | Network Hardware(concept) |
| 3. | Week 3 | 4 | WAN and LAN and internet |
| 4. | Week 4 | 4 | Understanding Transmission Medium (Network Cables) |
| 5. | Week 5 | 4 | TCP/IP |
| 6. | Week 6 | 4 | Moving Data in the Network |
| 7. | Week 7 | 4 | IP Addressing |
| 8. | Week 8 | 4 | Vlan |
| 9. | Week 9 | 4 | Network design steps (SDLC) |
| 10. | Week 10 | 4 | (PDIOO) Network Life Cycle |
| 11. | Week 11 | 4 | WWW and HTTP |
| 12. | Week 12 | 4 | Domain Name System – Introduction |
| 13. | Week 13 | 4 | Domain Name System |
| 14. | Week 14 | 4 | Review |
| 15. | Week 15 | Examination | |
| **19.** | **Examinations:**  ALL LECTURE | | |
| **20.** | **Course Policy:**  Designed to cover the structure, implementation, and theoretical underpinnings of computer networks. | | |
| **21.** | **Notes:**  Students will work in groups to prepare a 20-minute presentation on a topic of their choosing. The presentations will be conducted during the last few weeks of class. | | |