NEU, Department of Computer Information Systems

Course Unit Title	Computer Networks
Course Unit Code	CIS 416
Type of Course Unit	Technical Elective
Level of Course Unit	Bachelor"s degree
National Credits	3
Number of ECTS Credits Allocated	4 ECTS
Theoretical (hour/week)	2
Practice (hour/week)	1
Laboratory (hour/week)	2
Year of Study	4
Semester when the course unit is delivered	2
Course Coordinator	Prof.Dr. Dogan Ibrahim
Name of Lecturer (s)	Doğuş Sarıca
Name of Assistant (s)	Eren Asvapa
Mode of Delivery	Lecturing E-learning activities
Language of Instruction	English
Prerequisites and co-requisites	CIS 131
Recommended Optional Programme Components	Basic background on Computer Sciences

Objectives of the Course:

To understand (a good slice of) the state-of-the-art in network architecture, protocols, and networked systems, and to understand how to conduct networking research and develop innovative ideas.

Learning Outcomes

	When this course has been completed the student should be able to	Assessment.
1	Learn the basic network elements	1
2	Learn the architecture of computer networks	1,2
3	Learn how to setup a simple computer network	1,5
4	Learn how to setup an advanced computer network	3,5
5	Understant the problems in computer networks and how to solve these problems	2,5
	Assessment Methods: 1. Written Exam, 2. Assignment 3. Project/Report, 4.Presentation, 5 Lab. Work	

Course's Contribution to Program

		CL
1	Apply computer technology to address business information system needs.	4
2	Demonstrate a deeper understanding of at least one area of computing, such as programming, networking, technical support or web technology, enabling the student to gain employment in the information systems field.	5
3	Demonstrate critical thinking in understanding, evaluating and applying technology solutions to real life problems.	5
4	Demonstrate familiarity with e-commerce resources, tools, including web programming, publishing, database management tools.	4
5	Articulate ethical and professional standards to the use of computer information systems and computer based data.	3
6	Effectively use personal, interpersonal and communication skills in team work, time management in projects and self-learning.	5
7	Grow professionally through continuing education, research and development, and involvement in professional activities to recognize the need to engage in continuing professional development and lifelong learning.	3
8	Identify, analyze and develop solutions for information systems-related business problems/opportunities.	4
9	Demonstrate knowledge of current information, theories and models, and techniques and practices in all of the major business disciplines including the general areas in information technologies.	4

CL: Contribution Level (1: Very Low, 2: Low, 3: Moderate 4: High, 5:Very High)

Course Contents

Week	Chapter		Exams
1	1	TCP/IP Implementation Overview.	
2	2	UDP/TCP Code Walkthrough.	
3	3	TCP Implementation Walkthrough.	
4	4	Simple Queueing Theory.	
5	5	Modeling Networks. Network Simulation Tools.	
6	5	Modeling Networks. Network Simulation Tools.	
7	6	Multimedia Applications. Digital audio and video.	
8	7	High-Speed, Integrated Services Networks. ATM, Label Switching,	
9		Revision	
10			Mid-term
11	8	Mechanisms and protocols for QoS.	
12	9	Multicast Routing Protocols.	
13	10	Web Performance Issues	
14	11	Various Topics: ALF, ILP.	
15	11	Various Topics: ALF, ILP., and Revision	
16			Final Exam

Recommended Sources

Textbook: Wright, G., and Stevens, W., (1996). TCP/IP Illustrated, Volume 2.Addison-Wesley.

Supplementary Material (s): Forouzan, B.A. (2004).Data Communications and Networking, 3/e, ISBN: 0072515848.

Assessment

Attendance & Assignment	5%	
Midterm Exam (Written)	30%	
Term Project	25%	
Final Exam (Written)	40%	
Total	100%	

ECTS Allocated Based on the Student Workload

Activities	Number	Duration (hour)	Total Workload(hour
Course duration in class (including the Exam week)	16	3	48
Tutorials	7	2	14
Assignments	5	2	10
Project/Presentation/Report Writing	1	10	10
E-learning Activities	3	1	3
Quizzes	2	1	2
Midterm Examination	1	2	2
Final Examination	1	2	2
Self-Study	15	2	30
Total Workload			121
Total Workload/30 (h)			4

ECTS Credit of the Course	4