

Ders Kodu	Ders Adı	Teorik	Uygulama	Laboratuvar	Yerel Kredi	AKTS
EEE462	BİLGİSAYAR AĞLARI VE GÜVENLİK	3,00	0,00	0,00	3,00	6,00
Ders Detayı						
Dersin Dili	: İngilizce					
Dersin Seviyesi	: Lisans					
Dersin Tipi	: Seçmeli					
Ön Koşullar	: Yok					
Dersin Amacı	: The aim of this course is to equip the students with theoretical and practical aspects of computer networking, especially TCP/IP protocol suite. The focus will be on upper layers. Homework assignments, labs and class project will primarily be used by students for a deeper understanding on the operational issues and design principles of the Internet and especially application layer protocols. The class project will give the students the ability to design an application layer protocol to work over TCP/IP as well.					
Dersin İçeriği	: This course is an introduction computer networks. Topics include network architectures, local and wide-area networks, network technologies and topologies; data link, network, and transport protocols, point-to-point and broadcast networks; routing, addressing, naming, multicasting, switching, internetworking congestion/flow/error control, quality of service, and network security.					
Dersin Kitabı / Malzemesi / Önerilen Kaynaklar	: Computer Networking with Internet Protocols and Technologies, William Stallings, ISBN: 0-13-191155-4					
Planlanan Öğrenme Etkinlikleri ve Öğretme Yöntemleri	: İnteraktif öğrenme, göreve dayalı öğrenim Ders anlatımı Soru çözme oturumu Pratik deneyler					
Ders İçin Önerilen Diğer Hususlar	: Computer Networks related course materials should be included.					
Dersi Veren Öğretim Elemanları	: Prof. Dr. Adnan Kaya					
Dersi Veren Öğretim Elemanı Yardımcıları	: -					
Dersin Verilişi	: yüzyüze					
En Son Güncelleme Tarihi:	:					

Ders Öğrenme Çıktıları

Bu dersi tamamladığında öğrenci :
1 Define the basic terminology and characteristics of computer networks, networking equipment and standard reference models and wireless and wired communication media
2 Design and analyze basic models of packet and/or circuit switched networks
3 Demonstrate detailed understanding of selected TCP/IP application layer protocols including design and implementation of an application layer protocol using TCP/IP sockets or other inter-device communication primitives
4 List the primary function, activities, and application areas of local area networks and analyze various performance metrics of medium access control protocols
5 Apply and analyze various flow and error detection/control algorithms on direct communication links
6 Demonstrate understanding of IP (Internetworking Protocol) and TCP (Transmission Control Protocol) and all related mechanisms at TCP and IP layers including routing, addressing, traffic control and congestion control algorithms and mechanisms.

Ön Koşullar

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Haftalık Konular ve Hazırlıklar						
	Teorik	Uygulama	Laboratuvar	Hazırlık Bilgileri	Öğretim Metodları	Dersin Öğrenme Çıktıları
1.Hafta	*Protocol layers and service models. OSI and Internet protocols					
2.Hafta	*What is the Internet. Concepts of delay, security, and Quality of Service (QoS).					
3.Hafta	*Application layer protocols and client-server model					
4.Hafta	*Sockets programming in C (client-server and web server programs).					
5.Hafta	*Reliable data transfer. Stop-and-Go evaluation. TCP and UCP semantics and syntax					
6.Hafta	*TCP RTT estimation. Principles of congestion control					
7.Hafta	*Principles of routing: link-state and distance vector. IP semantics and syntax.					
8.Hafta	*Link layer. Error detection. Multiple access protocols. Midterm Exam.					
9.Hafta	*IEEE 802.3 Ethernet.					
10.Hafta	*Switching and bridging. Media. Signal strength. Data encoding					
11.Hafta	*Wireless and mobile networks					
12.Hafta	*Security. Overview of threats, cryptography, authentication, and firewalls					
13.Hafta	*Network management including SNMP. Network troubleshooting					
14.Hafta	*Hot topics. Sensor networks and Software Defined Networks					

Değerlendirme Sistemi %
1 Final : 60,000
2 Vize : 40,000

AKTS İş Yüğü			
Aktiviteler	Sayı	Süresi(Saat)	Toplam İş Yüğü
Vize / Midterms	2	3,00	6,00
Ödev / Assignment	10	2,00	20,00
Kısa Sınav / Quizzes	10	1,00	10,00
Final / Final	1	10,00	10,00
Ders Sonrası Bireysel Çalışma / Individual study after lecture	15	3,00	45,00
Ara Sınav Hazırlık / Preparation for midterm	2	15,00	30,00
Final Sınavı Hazırlık / Preparation for final	1	20,00	20,00
Teorik Ders Anlatım / Theoretical Lecturing	15	3,00	45,00
			Toplam : 186,00
			Toplam İş Yüğü / 30 (Saat) : 6
			AKTS : 6,00

Program Öğrenme Çıktısı İlişkisi											
	P.Ç. 1	P.Ç. 2	P.Ç. 3	P.Ç. 4	P.Ç. 5	P.Ç. 6	P.Ç. 7	P.Ç. 8	P.Ç. 9	P.Ç. 10	P.Ç. 11
Ö.Ç. 1	3	3	2	1	4	1	1	3	1	1	4
Ö.Ç. 2	3	3	2	1	4	1	1	3	1	1	4
Ö.Ç. 3	3	3	2	1	4	1	1	3	1	1	4
Ö.Ç. 4	3	3	2	1	4	1	1	3	1	1	4
Ö.Ç. 5	3	3	2	1	4	1	1	3	1	1	4
Ö.Ç. 6	3	3	2	1	4	1	1	3	1	1	4