

EE 511: Advanced Computer Networks

Lecture Schedule	Tuesday, Thursday 6:00 – 7:30 pm	Semester	Spring 2019		
Credit Hours	Three	Pre-requisite	Computer Networks (UG)		
Instructor	Muhammad Ali	Contact	m.ali@uet.edu.pk		
Office	Room # 206 EE Department UET, Lahore	Office Hours	Tuesday, Thursday 4:00 – 6:00 pm		
Course Description	The course aims to provide overview of the networking technologies that enable the design, development, deployment, and operation of complex modern networks, including and especially software-defined networks (SDN), network functions virtualization (NFV), quality of service (QoS), and quality of experience (QoE). It inculcates the network architectures that have come to dominate modern networking, which are cloud networking and the Internet of Things (IoT), also known as fog networking.				
Measurable Learning Outcomes	CLOs	Description		PLOs	Level
	CLO1	Review data, control and application planes of software-defined networks		PLO1	High
	CLO2	Illustrate network functions virtualization (NFV) architecture and functionality		PLO1	High
	CLO3	Incorporate network design implications of Quality of Service (QoS) and Quality of Experience (QoE)		PLO1	High
	CLO4	Demonstrate the architecture, implementation and security of clouds and IoT		PLO1	High
Textbooks	REQUIRED: Foundations of Modern Networking (SDN, NFV, QoE, IoT, and Cloud) by William Stallings, 1 st Edition, Pearson Education. OPTIONAL:				
Grading Policy	Assignments/Quizzes Midterm Final	30% 30% 40%	CLO1 to CLO4 CLO1 to CLO2 CLO3 to CLO4		

Lecture Plan

Weeks	Topics	Chapters & CLOs
0.5*	Elements of Modern Networking	Ch1 CLO1-4
0.5*	Requirements and Technology	Ch2 CLO1-4
1*	SDN: Background and Motivation	Ch3 CLO1
1*	SDN Data Plane and OpenFlow	Ch4 CLO1
1*	SDN Control Plane	Ch5 CLO1
1*	SDN Application Plane	Ch6 CLO1
1*	Network Functions Virtualization: Concepts and Architecture	Ch7 CLO2
1*	NFV Functionality	Ch8 CLO2
1*	Network Virtualization	Ch9 CLO2
MIDTERM		
1*	Quality of Service	Ch10 CLO3
1*	QoE: User Quality of Experience	Ch11 CLO3
1.5*	Network Design Implications of QoS and QoE	Ch12 CLO3
1*	Cloud Computing	Ch13 CLO4
1*	The Internet of Things: Components	Ch14 CLO4
1*	The Internet of Things: Architecture and Implementation	Ch15 CLO4
1.5*	Security	Ch16 CLO4
FINAL		

* - Tentative