



Course Specifications												
<b>Program</b> (s) on which this course is given:				Professional Masters (Telecommunications)								
Department offering the program:				Electronics & Electrical Communications Engineering								
Department offering the course:				Electronics & Electrical Communications Engineering								
Academic Level:				Masters								
Date				2016								
Semester (based o	n final ex	am timing)		☑ Fall □ Spring								
A- Basic Information												
1. Title:	Fundamentals of Telecom			munications Net	works	Code:	ECP 602	ECP 602				
2. Units/Credit	Lectures 2			Tutorial		Practical	1	Total	3			
hours per week:									_			
<b>B- Professional Information</b>												
1. Course description:		This course covers the fundamental networking concepts, technologies and standards ranging from the basic data transmission technologies up to the different protocols used in the layers of the main telecommunication network architectures and standards. The conceptual and implementation aspects of the network application layer. The services offered by different transport protocols used in Telecom networks (TCP and UDP). Routing and network layer architecture. Data link layer and medium access control in both wired and wireless networks. The course includes extensive laboratory sessions and project assignments for network design and analysis of case studies, e.g., WLANs, Cellular, and the Internet.										
		a) Knowledge and Understanding										
		1. Break down the conceptual and implementation aspects of network application protocols for both client-server and peer-to-peer models.										
		2. Differentiate the TCP and UDP transport-layer service models.										
		3. Explain the structures and protocols used in the IEEE 802.3 Ethernet and IEEE 802.11 wireless LAN and justify their designs in the context of local area networks.										
		b) Intellectual Skills										
	Learning Course	1. Analyze and critique the performance of different network devices, architectures, service models and access technologies and be able to identify the best choice for a given set of requirements.										
2. Intended I Outcomes of (ILOs):		<ol> <li>Develop an attitude to propose solutions for problems related to telecommunications networks through the investigation of different protocols and wired/wireless standards learnt throughout the course.</li> </ol>										
		c) Professional and Practical Skills										
		1. Design, calculate, and apply the appropriate masking and addressing to fulfill given requirements in IPv4 and IPv6 networks.										
		2. Build a simple Ethernet network using routers and switches.										
		3. Utilize common network utilities to verify small network operations and analyze data traffic.										
		d) General and Transferable Skills										

TopicTotahnorsLecture hoursNutorial / Practical hours1. Fundamental Netwing Concepts4.51.51.52. Application Layer1.50.513. Transport Layer6114. Network/IP Layer12225. Data Link Layer1241261114. Network/IP Layer12412611117. Sobat Link Layer124127. Sobat Link Layer124128. Sobat Link Layer124129. Sobat Link Layer1212129. Sobat	3. Contents										
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