**University of Management and Technology**

School of Engineering

Department of Electrical Engineering

**Course Outline**

Course code……EL-330…... Course Title………Computer Network Lab……

|  |  |
| --- | --- |
| Program | BSEE |
| Credit Hours | 1 |
| Duration | One semester |
| Prerequisites | Nil |
| Resource Person | Abdullah Khalid |
| Counseling Timing  (Room# ) | See Office door  Electrical Machines Lab |
| Contact | [abdullah.khalid@umt.edu.pk](mailto:abdullah.khalid@umt.edu.pk) |

**Chairman/Director signature………………………………….**

**Dean’s signature…………………………… Date………………………………………….**

**Learning Objective:**

The lab deals with fundamental and practical aspect of Computer Networks. Thelab practicals have been designed in such a way as to help students understand course contents from a practical perspective, get sound engineering knowledge along with hands-on experience in the usage of networking equipment. The Lab directly contributes to **objectives**a, d, e and f of the HEC Electrical Engineering Curriculum.

Upon completion of this lab, students will:

* Gain an understanding of modern day computer networks
* Apply OSI & TCP/IP protocols architectures
* Design, Simulate and Analyze Networks (software and hardware)

The Lab strongly supports expected **outcomes** a, d, f, i, l and m of the HEC Electrical Engineering Curriculum.

**Learning Methodology:**

Practical, interactive, participative

**Grade Evaluation Criteria**

Following is the criteria for the distribution of marks to evaluate final grade in a semester.

**Marks Evaluation Marks in percentage**

Lab Manuals & Performance: 40%

Final Viva or Quiz + Performance: 60%

Total 100%

**Recommended Text Books:**

**Computer Networks** by Andrew S. Tanenbaum (5th Edition)

**Reference Text Books:**

**Computer Networking; A Top Down Approach** by Kurose and Ross (6th Edition)

**Calendar of Course contents to be covered during semester**

Course code……EL-330…... Course title……Computer Network Lab………

|  |  |  |
| --- | --- | --- |
| **Week** | **Course Contents** | **Relevance to Theory Course** |
| 1. | **Introduction to Networking** | TB: Chapter 1 |
| 2 | **Networking Media** | TB: Chapter 2 |
| 3 | **Topology Orientation and Building a Small Network** | TB: Chapter 1,2 |
| 4 | **Introduction to Switch & Its Basic Configurations** | TB: Chapter 2,3 |
| 5 | **Basic VLAN Configuration** | TB: Chapter 2,3 |
| 6 | **Introduction to Router & Its Basic Configurations** | TB: Chapter 2,3,5 |
| 7 | **Static Routing** | TB: Chapter 2,3,5 |
| 8 | **Using Wireshark to view Protocol Data Units** | TB: Chapter 5 |
| 9 | **Dynamic Routing protocol using RIP and EIGRP** | TB: Chapter 6 |
| 10 | **Dynamic Routing protocol using OSPF** | TB: Chapter 6 |
| 11 | **Basic DHCP and NAT Configuration** | TB: Chapter 6 |
| 12 | **Basic Inter-VLAN Routing** | TB: Chapter 6 |
| 13 | **IPv6 Configurations** | TB: Chapter 6 |