University of Embu
Department of Computing and Information Technology (CIT)

Course code: CSC 225   **Course Title:** computer networks

Semester: second   **Academic year:** 2023/2024

Course Purpose

To explain fundamental generic concepts and principles in computer networking

Expected Learning Outcomes

At the end of the course, the learner should be able to:

1. Describe and explain fundamental generic concepts and principles in computer networking.
2. Describe the layered network architecture reference models
3. Describe and analyze common network topologies, protocols and standards.
4. Describe and analyze the TCP/IP architecture, its protocols and applications.
5. Describe and analyze contemporary network technologies.

Course Outline (Topics and subtopics)

Week/ Date	Lecture Topic	Remarks
1: xx	Uses of computer Networks, classification of computer networks; layered network architecture; OSI and TCP/IP reference Models	
2: xx	**Data Link Layer and LANS** Data link services and protocols;	
3: xx	Medium access protocols	
4: xx	**Network layer** End-to end Connection oriented and Connectionless service;	

5: xx	CAT 1	
6: xx	Switching techniques; Routing; Congestion Control	
7: xx	Routing algorithms	
8: xx	Sub netting	
9: xx	Dynamic Host Configuration Protocol (DHCP)	
10: xx	CAT 2	
11: xx	The Internet Transport Protocols	
12: xx	**Transport Layer**: Transport services and mechanisms; : TCP and UDP;	
13: xx	**Application layer:** Principles of application layer protocols	
14 & 15	Examination	

Mode of Delivery
Lectures and Tutorials
Use of practicals

Instructional Materials and/or Equipment
Projectors
White boards
Marker pens

Assessment

CATs(50%)
- Practical reports
- Assignments
- Sit in CATs
- Take away cats

End of semester examination: (50 %)

Reference Textbooks

1. Computer Networks - Andrew S Tanenbaum, 4th Edition, Pearson Education.2020

2. Data Communications and Networking - Behrouz A. Forouzan, Fifth Edition TMH, 2018.

Useful web pages

1. ..tutorialspoint.com

Name of Lecturer: **Sign:** **Date:**