KANNUR UNIVERSITY

(Abstract)

Syllabus of the Certificate Course - System and Network Administration under Centre for Life Long Learning running in collaboration with Department of Information Technology- Implemented w.e.f. 2023 -24 academic year -orders issued.

ACADEMIC C SECTION

ACAD C/ACAD C1/5633/2024 Dated: 09.07.2024

Read:-1.Resolution of the Syndicate vide item No.2023.350 dtd.04.07.2023

2.U O No. Acad.A2 /5565/ND&C/2008 Vol. II dated 03.10.2023

3. The Orders of the Vice Chancellor dated 05.01.2024

4. Report submitted by the Ad hoc Committee Convenor, Computer Science (PG) dated 12.01.2024

5. The Orders of Vice Chancellor dated 31.01.2024

6.U.O.Note No.SDE-1-2/70/2023 dtd.08.02.2024

ORDER

1. As per the paper read (1), it has been decided to start Short term Certificate Courses / Programmes under Centre for Life Long Learning of Kannur University, in collaboration with the University Teaching Departments from the academic year 2023-24.

2. Subsequently, the Head, Department of Information Technology of the University submitted the Proposal/Syllabus of the Certificate Course,namely: 'System and Network Administration', intended to start under the Centre for Life Long Learning of the University in collaboration with the Department of Information Technology.

3. In the circumstance of nonexistence of Board of Studies, as ordered by the Vice-Chancellor vide paper read 3 above, the Syllabus of the Certificate course, submitted by the Head, Dept of IT was forwarded to a Committee, comprising with the Dean, Faculty of Technology and Convenor, Ad hoc Committee for Curriculum and Syllabus revision of Computer Science (PG) programmes in Affiliated Colleges, for verification and furnishing Remarks.

4. The Convenor of the Committee submitted the Report vide paper read 4 above.

5. The Vice Chancellor, after considering the Report submitted by the Convenor and in exercise of the powers of the Academic Council conferred under section 11(1) Chapter III of Kannur University Act, 1996 and all other enabling provisions read together with, ***approved the Syllabus of the Certificate course - 'System and Network Administration' and accorded sanction to implement the same in Centre for Life Long Learning under the School of Life Long Learning of the University w.e.f.2023-24 academic year, subject to reporting to the Academic Council***.

6. Subsequently, the Director, School of Life Long Learning vide paper read 6 above, forwarded the approved Syllabus to issue formal University Order in this regard.

7. Hence, orders are issued accordingly,approving the Syllabus of the Certificate course - 'System and Network Administration' .

8.The Syllabus of the Certificate course- System and Network Administration conducting at the Centre for Life Long Learning of the University, in collaboration with Dept of IT, with effect from 2023 -24 academic year, is uploaded on the University website.

Sd/-

ANIL CHANDRAN R

DEPUTY REGISTRAR (ACADEMIC)

For REGISTRAR

To: 1. The Director, School of Life Long Learning
2. The Head, Department of Information Technology

Copy To: 1. PS to VC/ PA to R
2. DR / AR (Acad)
3. Examination Branch (Through PA to CE)
4. Web Manager(for uploading in the Website)
5. SF / DF /FC

Forwarded / By Order

SECTION OFFICER

KANNUR UNIVERSITY
CIVIL STATION P.O.
KANNUR
Pin-670 002
THAVAKKARA

Syllabus & Guidelines for Certificate Course – System and Network Administration

KANNUR UNIVERSITY

DEPARTMENT OF INFORMATION TECHNOLOGY

Jointly With

SCHOOL OF LIFELONG LEARNING

2023

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Course Name: System and Network Administration

Certificate course in System and Network Administration

1.1 OBJECTIVE OF THE COURSE

Certificate Program in **System and Network Administration** is a 45 Days program (60 hours) offered by Department of Information Technology, Kannur University, and Is an excellent blend of knowledge and practice in the field of System and Network Administration and Hardware Management field. The program is targeted for creating qualified IT professionals who are not just theoretically experts but also practically experts in this field. The Program also offers industry oriented hands-on real time analytical classes for students to get fully equipped, which makes them highly competitive and employable on completion of the program.

1.2 PROGRAMME OUTCOMES

• **PSO1:** Encourages and prepares the students to take up a career in the highly competitive IT industries and other MNC's.

• **PSO2:** Equip students with comprehensive knowledge and advanced understanding of System Administration, Hardware's and Networking.

• **PSO3:**Their technical skills include the ability to assemble a computer from scratch as well as the implementation, management and maintenance of computers, networks and hardware's. Also, they will be ready to be deployed in any related industry with the knowledge acquired from this course.

• **PSO4:** Attain knowledge in the advanced areas of networking which can only be earned from a globally accepted certification's like CCNA, CCNP.

•**PSO5:** Employment Areas.

- ★ Multinational Companies (MNC's)
- ★ Colleges & Universities
- ★ Hardware & Network Assembly Companies
- ★ Banks
- ★ Hospitals
- ★ System Design Companies
- ★ Hospitals
- ★ IT Companies
- ★ Call Centers

- **PSO6:** Hardware and Networking Technology Job Types.
  - ★ System and Network Administrator
  - ★ Server Administrator
  - ★ Router Operator
  - ★ Network Engineer
  - ★ System Engineer
  - ★ Network Designer
  - ★ Hardware Executive
  - ★ Back up Operator
  - ★ Hardware Consultant
  - ★ Technical Support Executive

1.3 DURATION OF THE COURSE

Total Duration of the Course – 45 Days [60 hours]

Theory - 30 hours

Practical - 30 hours.

1.4 VENUE OF THE COURSE

VENUE: Department of Information Technology, Kannur University, Mangattuparmba Campus, Magattuparamba, Kerala, 670567.

The classes will be scheduled in the evening / week end – in hybrid mode

1.5 ELIGIBILITY

Candidates who have passed PLUS TWO having minimum computer knowledge are eligible for this course.

1.6 NUMBER OF SEATS

This course has a maximum intake of 30 seats and minimum intake of 15 seats.

1.7 NATURE OF THE COURSE

This course is a Certificate Course offered by the Department of Information Technology, Kannur University, Mangattuparamba Campus.

1.8 EXAMINATION AND CERTIFICATION

Written and Practical Examination will be conducted after the course completion.

Course Name	**Theory (CE)**	**Theory (ESE)**	**Lab (CE**	**Lab (ESE)**	**Total**	**Credit**
System and Network Administration	40	60	-	-	100	2
Lab – System and Network Administration	-	-	40	60	100	2
Total	40	60	40	60	200	4

Certificate will be provided to the candidates after successful completion of the course. End semester Examination will be conducted by Department. Final mark list will be forwarded to Director School of Life Long Learning for issuing of the certificate

1.9 Grading System

An alphabetical grading system shall be adopted for the assessment of student's performance in a course. The grade is based on a ten-point scale. The following table gives the range of marks, grade points and the alphabetical grade.

Range of Marks (%)	**Grade points**	**Alphabetical grade**
90-100	9	A+
80-89	8	A
70-79	7	B+
60-69	6	B
50-59	5	C
<50	0	F

A minimum of grade point5 (Grade C) is needed for the successful completion of a course.

Supplementary Examinations for Failed Candidates:

Candidates who have failed (F grade) in the examination; they can appear for the failed papers along with subsequent batches. In such cases, the Continuous Evaluation (CE) marks shall remain the same. Two such supplementary chances will be given for a student within two subsequent batches. In case if there is delay in starting the subsequent batch; in such cases the supplementary examination will be conducted with four months. Two supplementary chances will be given for a

candidate who failed in the examination. Appearance for Continuous Evaluation and End Semester Evaluation are compulsory and no grade shall be awarded to a candidate if he/she is absent for CE/ESE or both.

1.10 SYLLABUSCOURSE OUTLINE

System and Network Administration

Unit Name	SUBJECT CODE	THEORY (Hrs.)	PRACTICAL (Hrs.)	TOTAL HOURS OF INSTRUCTIONS
Unit 1	System Administration Fundamentals	10	10	20
Unit 2	Networking	10	10	20
Unit 3	Hardware Management	10	10	20
TOTAL		**30**	**30**	**60**

UNIT – I

SUBJECT: System Administration Fundamentals

System Administration Fundamentals –Theory

Overview of system administration and its role in IT industries ,Different operating systems and its features, Booting an OS in pen drive and other medias, Installation and configuration of operating systems, BIOS, dual booting, Different ports on a PC. Web server configuration , Different types of processors, various types of networks, network trouble shooting, Types of memory, Static and Dynamic memory, backup

and recovery, User and group management, permissions, and file security, different types of viruses, role of antiviruses.

System Administration Fundamentals – Practical

OS iso image download, Windows and Linux iso image booting in pen drive , CD drives, Overview of Windows and Linux operating systems GUI and their editions, booting from installation media and accessing the installation wizard, Dual booting, hard disk management, booting into SSD drive, files backup , file recovery , restoration of old files , restoration tools , different users and accounts and setting there permissions management ,trouble shooting a network , troubleshooting an operating system when its down , steps to secure a system from variouscyber-attacks.

UNIT – II

Subject: Networking

Networking- Theory

Definition and importance of networking, network architecture: Peer-to-Peer and Client/Server Network. Network Topologies – Star, Ring, Bus, Tree, Mesh, Hybrid. Types of Networks – Local Area Network (LAN), Metropolitan Area Network (MAN), Wide Area Network (WAN), Intranet and Internet. Wi-Fi, Bluetooth. Unshielded twisted pair (UTP), shielded twisted-pair (STP), Fiber Optics and coaxial cable: RJ-45, RJ-11, BNC. Understanding color codes of CAT5 cable. Modems, Firewall, Hubs, Bridges, Routers, Gateways, Repeaters, Transceivers, Switches– their functions, advantages and applications. OSI, TCP/IP. Simple Mail Transfer Protocol (SMTP),

Telnet, File Transfer Protocol (FTP), Hyper Text Transfer Protocol (HTTP). Setting IP Address (IPV4/IPV6) & Subnet Mask, Classes of IP Addressing. Introduction to Network Security, Concept of Dynamic Host Configuration Protocol and DNS.

Networking-Practical

Familiarization with various Networking devices, Connectors and Cables. Crimping an ethernet cable. Install a basic Network using Router, switch, hub and multiple systems. IP Addressing Technique (IPV4/IPV6) and Subnetting and Super netting the network. Understanding network diagnostic tools (ping, traceroute, etc.) for troubleshooting. Creating a file server to share any files through a network. Troubleshoot common network connectivity and configuration issues. Overview of network security concepts including firewall, DHCP and DNS Servers configurations.

UNIT – III

Subject: Hardware Management

Hardware Management –Theory

Overview of computer hardware components ,Basic computer architecture , Role of hardware in the overall system , Motherboard components and specifications , Types of memory: RAM, ROM, cache , Hard disk drives (HDDs) , Solid-state drives (SSDs) , Flash memory and USB drives , Input/Output Devices , Keyboards, mice, and other input devices , SMPS Power supplies, Step-by-step guide to assembling a computer, Hardware Troubleshooting and Maintenance , Common hardware issues and

diagnostics, Tools and techniques for troubleshooting, Preventive maintenance.

Hardware Management – Practical

Identify and understand the various hardware components of a computer system. Assembly of a complete desktop system. Practical walk through over SMPS, the Processor, the Motherboard, RAM, ROM, Hard Drive, Fans, a CPU Cooler, CMOS Battery, Basic troubleshooting etc. Demonstrate proficiency in assembling a computer system. Properly connect and manage cables within the system. Perform basic troubleshooting to diagnose and resolve hardware-related issues.