

COURSE PROSPECTUS

Name of the Group: IT Group

Name of the Course: Certificate Course in Network Administration and Security

Course Code: IS701

Starting Date: 26-02-2018

Duration: 4 Weeks

Preamble:

Data networks are more crucial for businesses than ever before. They are the lifeline to the critical financial, healthcare and information services that need to function at the highest, most secure level. Network administrators are in charge of a company or organization's network and computer systems. They oversee how these systems run and may give technical support or troubleshooting when something doesn't go quite right.

Network administrators install, configure and maintain local area networks (LANs) and wide area networks (WANs). In addition, network administrators also need to secure these systems. This may include installing security devices, configuring network permissions, encrypting network transmissions and monitoring those systems to guarantee their integrity. Network administrators are employed in almost every industry and almost every company.

Objective of the Course:

The Course is a four weeks program aimed at giving the candidate the exposure to and enhancing the knowledge and skills to configure, manage and troubleshoot the network infrastructure and keep their organization productive.

Outcome of the Course:

On successful completion, the candidate will be able to:

- Understand the basics of Linux Operating Systems.
- Understand networking standards and specifications.
- Build a SOHO network.
- Understand TCP/IP, Protocol analysis and IP addressing (IPv4 and IPv6)
- Understand the concepts of Subnetting, IP Routing and NAT.
- Configure Switching and VLANs
- Configure Wireless networking.
- Configure firewalls and basic server applications.
- Understand network security, management and troubleshooting

Course Structure:

Sl. No.	Topics	Duration
1	Introduction to Linux, Networking & Devices	1 Week
2	TCP/IP, Protocol Analysis, Subnetting & Routing	1 Week
3	Switching & VLANs, Wireless LANs, Authentication	1 Week
4	Security & Infrastructure services, Network Management	1 Week

Other Contents

a. Course Fees :

General Candidates: Course fee is ₹ 10,000/- (Including GST)

SC/ST Candidates : Tuition Fees/Examination fees are waived for SC/ST students admitted under SCSP/TSP. However they are required to remit an amount of ₹ 1000/- as **Advance caution/security deposit**. This amount will be considered as caution/security deposit and will be refunded after successful completion of the course. If the student fails to complete the course successfully this amount along with any other caution/security deposits by the student will be forfeited.

Modular wise Course Fee: Not Applicable for this course

b. Registration Fee: An amount of ₹ 1000/- should be paid at the time of registering for the course. The same will be considered as caution deposit on student joining the course. This advance deposit will not be refunded for a selected candidate who does not join the course.

c. Course Fee Installment Structure: Not applicable for this course

d. Eligibility:

Three year Polytechnic Diploma/ Any Bachelors Degree, with basic computer skills, and interest in computer networking

e. Number of Seats : 20

f. How to Apply :

Students are advised to apply online @<http://nielit.gov.in/content/online-registration>. Payment towards advance fee of ₹ 1,000/- may be paid the **SBI Collect Payment Gateway** @<http://nielit.gov.in/calicut/content/mode-payments-0>

₹ 1000/- will be considered as refundable caution deposit on student joining the course, which will be refunded on successful completion of course. This advance

deposit will not be refunded for a selected candidate who does not join the course.

SBI Collect Payment Gateway:

1. Please click the SBI Collect hyper link to enter the payment gateway.
2. Select Payment Category as *Course Fee*
3. Enter all the fields including amount payable and follow the instructions

The following details should reach here before the due dates.

1. Name of the Depositor
2. Name of the Student
3. Date of Payment
4. Amount Deposited
5. Purpose – Course Name:
6. UTR Number

The Institute will not be responsible for any mistakes done by either the bank concerned or by the depositor while remitting the amount into our account.

g. Selection of candidates :

Based on their marks obtained in the qualifying examination, subject to eligibility and availability of seats.

h. Test/Interview : *Not Applicable*

i. Counseling/Admission : Starting Date of the Course

j. Spot Admission : If spot admission is open, spot admission will close within 15 days of Counseling/Admission of a particular course. On spot admission students should provide an undertaking saying that he/she is fully aware that he/she missed so much days of class and will not ask for extra classes or further extension of course.

k. Admission Procedure :

Students who have been selected for test/interview/counseling/admission are required to report to the Institute on the prescribed day by 9:30 hrs along with the following

1. Original and attested Copies of Proof of Age, Qualifications, etc
2. One passport size photograph and one stamp size photograph for identity card.
3. SC/ST Certificate (Original and attested copies, if applicable)
4. Income Certificate (Original and attested copy, if applicable)

The students on reaching the Institute are required to meet the Front Office Councilor (FOC). The FOC then directs the student to the Course Coordinator. The student gets the certificates and enrollment form verified by the Course Coordinator and then meets the FOC who shall direct the student to the Accounts for payment of fees. A student is thus admitted, attested copies of all documents shall be handed over to the Course Coordinator.

- l. Discontinuing the course:** No fees (including the caution deposit) under any circumstances, shall be refunded in the event of a student discontinuing the course. No certificate shall be issued for the classes attended.

A student can however, be eligible for module certificates (applicable only for courses which provide for modular admission) which he has successfully completed provided, he/she has paid the entire course fees. This is not applicable to SC/ST candidates availing fee concession. SC/ST candidates availing fee concession are eligible for module certificates only after completing the full course with required attendance

m. Course Timings :

9:30 Hrs to 17:00 Hrs (Excl Saturdays, Sundays and National Holidays - 13:00 Hrs to 14:00 Hrs Lunch break)

n. Location and how to reach :

NIELIT Calicut is located very close to NIT campus and is about 22Kms from the Calicut (Kozhikode) city. A number of buses (Buses to NIT via Kunnamangalam) are available from "Palayam Bus Stand and KSRTC Bus Stand". The bus stop at our Institute is called "Panthrand" and is one stop before NIT. The bus fare is around ₹ 13/- from Calicut City to NIELIT.

Calicut (Kozhikode) is well connected by Rail, Road and Air from different parts of the country. The maximum and minimum temperatures range between 35⁰C and 20⁰C.

o. Course enquiries :

Students can enquire about the various courses either on telephone or by personal contact between 9.15 A.M. to 5.15 P.M. (Lunch time 1.00 pm to 1.30 pm) Monday to Friday.

p. Important Dates:

Starting date: 26.02.18

Last date to submit application form: 19.02.18

Selection intimation in website: 21.02.18

Counseling/Admission 26.02.18

Commencement of class work: 26.02.18

Payment of Fee 26.02.18

q. Placement :

Support shall be provided

r. Hostel facilities :

Hostel accommodation is available for boys and girls on monthly or daily chargeable basis. The hostel fee varies from ₹ 1400 /- to ₹ 1500/-- per month depending on the type of accommodation. However, students are required to pay the hostel fees for the duration of the course for which they are seeking admission at the time of joining the course.

s. Canteen facilities :

Canteen & Mess facility is available for both boys & girls, students, those who avail mess facility should pay monthly mess fee @₹ 130/*- per day. An amount of ₹ 1000/- should be paid as mess advance to the Canteen Contractor at the time of joining the mess which will be adjusted in the last month mess fee.

**as per the present rate of contract agreement*

An amount of ₹ 3000/- should be paid as caution deposit (hostel & mess) at the time of joining the hostel which will be refunded/adjusted at the end of the course.

t. Lab Facilities :

The course lab is equipped with Cisco Catalyst 3650 L3 Managed Core Switch, L2 Managed switches, Wireless APs, IT Lab is equipped with Intel Xeon Dual Processor Rack servers from HP, Lenovo DELL, and more than 100 networked PCs with 1Gbps Internet connectivity. A variety of software is available which include various flavors of Windows and Linux Operating Systems and various commercial and open source development tools, database and cloud servers.

u. Course Contents :

1	Operating System Basics	Overview of Linux, Installation of Ubuntu/CentOS, add/remove software, updating, adding users. Basic Linux Commands.
2	Introduction to Networks	Introduction to LAN, WAN, Peer-to-Peer, Client-Server, topologies and network backbone
3	OSI Reference model	Internetworking models, Layered approach, advantages, functions of each layers. Introduction to encapsulation and modulation techniques.

4	Networking Topologies, Connectors, and Wiring Standards	Physical media, twisted pair cable, fiber optic cable, cable properties, transmission speeds, distance, wiring standards. UTP cable crimping, termination and testing.
5	Ethernet Specification	Ethernet basics, collision domain, broadcast domain, ethernet frames, addressing, physical layer.
6	Networking devices	Overview of common network connectivity devices – NIC, hub, bridge, switch, router, firewall, IDS/IPS, access points, load balancer, modem, multilayer switch, DHCP server, DNS server, proxy server.
7	Introduction to TCP/IP	Overview of TCP/IP protocol stack. TCP, UDP, IP headers. Common application layer protocols.
8	Protocol analysis	Protocol analysis with Wireshark. ARP, ICMP, DNS & HTTP
9	IP Addressing	IPv4 and IPv6 Addressing, subnetting, NAT.
10	IP Routing	Routing basics, Static and dynamic routing, Basic static router setup with Linux PC.
11	Routing Protocols	Introduction to Internet. Role of routers, routing vs forwarding, Distance vector and Link state protocols, Introduction to common routing protocols (RIP, BGP, OSPF etc.)
12	Switching and VLANs	Switching services, VLANs
13	Wireless Networking	Overview of The 802.11 standards, comparison, components – access points, Wireless NIC, antennas, controllers, mobile hot spots. Site survey, wireless security, RADIUS. Configuration of Access Points.
14	Authentication and Access Control	Overview of filtering, ACLs, tunneling, encryption, remote access, user accounts, password security, PKI, AAA services.
15	Network threats mitigation	Overview of Security threats, denial of service, distributed DoS, authentication issues, viruses, vulnerabilities, malicious users, phishing, forensics, patches, driver updates, configuration backups etc.
16	Security services and devices	Firewalls/UTMs, DMZ, Proxy servers, Application layer firewalls, Content filtering, IDS & IPS. Configuration of pfSense firewall.
17	Infrastructure services	Configuring NTP, DHCP, DNS and TFTP on Linux. Overview of LDAP.
18	WAN	WAN concepts & Technologies
19	Network Troubleshooting	Common network troubleshooting commands and tools.
20	Network Documentation and Management	Tools for Network diagramming and Network monitoring. Concepts of SNMP, RMOM, sFlow and NetFlow. Overview of security standards, policies and auditing.