नेशनल इंस्टीट्यूट ऑफ इलेक्ट्रॉनिक्स एंड इंफॉर्मेशन टेक्नोलॉजी, चेन्नई

National Institute of Electronics and Information Technology, Chennai

Autonomous Scientific Society of Ministry of Electronics & Information Technology (MeitY), Govt. of India

ISTE Complex, 25, Gandhi Mandapam Road, Chennai - 600025

Course Prospectus

PG Diploma in Information System Security (NSQF – Level 8)

Mode: ONLINE (Blended)

NIELIT
राष्ट्रीय इलेक्ट्रॉनिकी एवं सूचना प्रौद्योगिकी संस्थान, चेन्नई
National Institute of Electronics & Information Technology, Chennai

Ministry of Electronics & Information Technology
Government of India

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Course Prospectus

Name of the Group: Information Security

Course Name: PG Diploma in Information System Security

Course Code: IS 700

NSDA CODE: 2020/ITES/NIELIT/03604

NSQF LEVEL: 08

Duration: 720 Hours, 6 Months

Last Date of Registration: 18-11-2020

Display of Provisional Selection List: 19-11-2020

Payment of first instalment fee: 19-11-2020 to 24-11-2020

Course Start Date: 25-11-2020

Preamble: Business @ the speed of thought has moved from a buzzword to a business reality owing to the integration of business and technology. Digital infrastructures and information networks have become central to any business activity. The information residing on these computers, networks and in cloud are an essential asset and due care should be taken for its security. The impact of any loss of this asset or any downtime of the infrastructure is quite high with the proliferation of easy-to-use tools and open how to- discussions, the number of people aiming to hack in to or bring down the network is high, both in this country and abroad. Hence, there is a need for heightened security measures to protect both infrastructure and data.
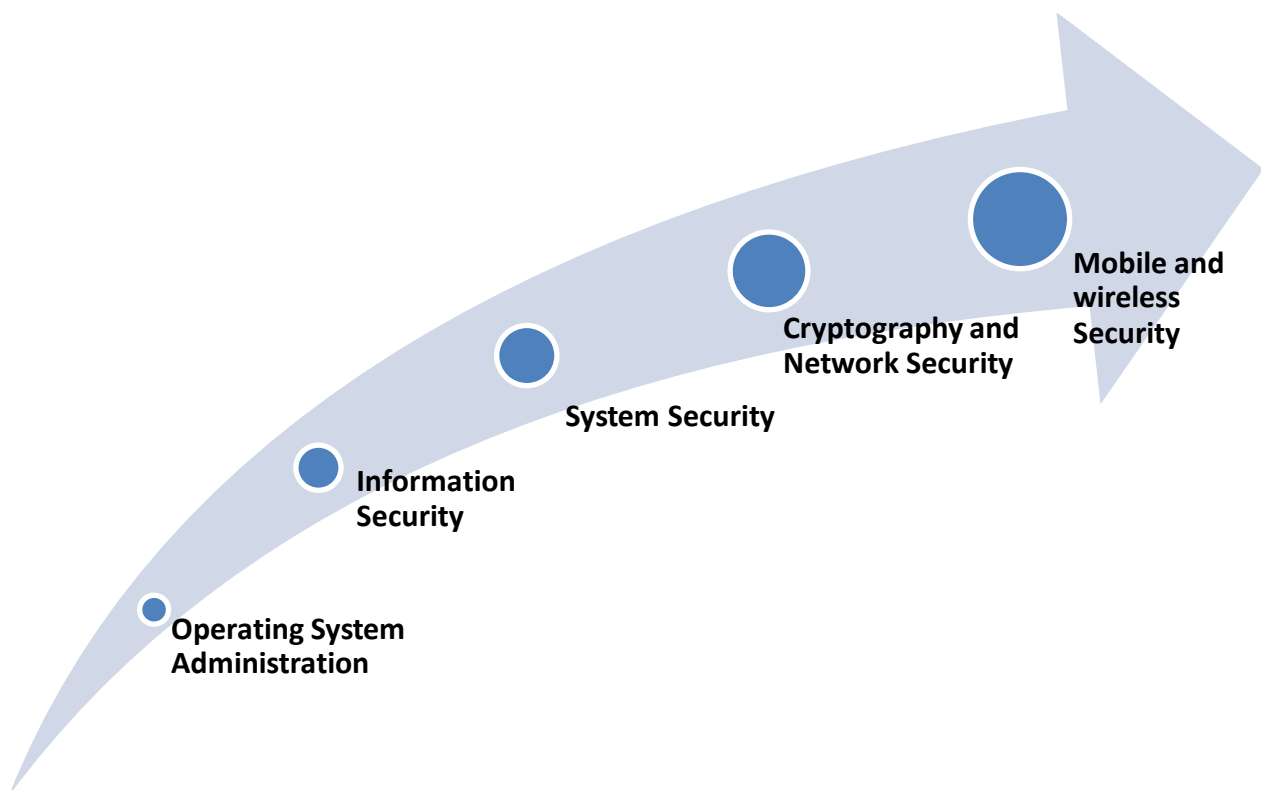
Objective of the Course:

The Course is 720 Hrs (24 weeks) program aimed at moulding candidates to Skilled Information System Security knowledge to maintain the Security of Systems and Networks in today's scenario.

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Outcome of the Course:

This skill-oriented course provides candidates with information required for configure and administration of OS Server, Networks, Database, Wireless & its Security and equip them with the skills required to protect & recover the computer systems & networks from various security threats in dedicated or virtual environment.

Full Flow of Course

Mobile and wireless Security

Cryptography and Network Security

System Security

Information Security

Operating System Administration

Course Structure

This course contains total six modules. After completing the first five modules, the students have to do a 120 Hours project using any of the topics studied to earn the PG Diploma.

Sl. No.	Module Name	Duration (in Weeks)
01	Computer Fundamentals and Computer Networks	2 Weeks
02	Operating System Administration	3 Weeks
03	Information Security Concepts	3 Weeks

04	System Security	3 Weeks
05	Cryptography and Network Security	2 Weeks
06	System and Device Security	2 Weeks
07	Mobile and Wireless Security	2 Weeks
08	Database and Web Application Security	1 Weeks
09	Project in Advanced Security	6 Weeks
Total Duration		24 Weeks

Course Contents

Module – I: Networking Fundamentals

- Introduction to ISO & TCP/IP Stack
- DNS/UDP/IP
- TCP/HTTP/HTTPS
- ICMP/DHCP
- Cabling
- Addressing
- Managing Basic Switches
- Managing Advanced Switches
- Managing Basic Routers

Module – II: Operating System Administration

- Installing Windows Server
- Setting Active Directory
- Managing Active Directory
- Managing User & Group
- Setting File, Web Server
- Backup and Restore
- Introduction to Linux Fundamentals & Commands
- Advanced Linux Commands

Module – III: Information Security Concepts

- Introduction to Information Security

- Configuring SSH

- Configuring DNS Server

- Practical on Discovery and scanning techniques (who is domain search query, ping, nslookup, traceroute, visual traceroute, DNS query).

- Configuring Web Server with Virtual Hosting

- Practical on Packet Sniffing tool Ethereal.

- Practical on password cracking tools john crack, Lophtcrack.

- Practical on Denial of Service, IP spoofing.

- Practical on network vulnerabilities assessment tool NMAP.

- Practical on ftp and telnet hacking

Module – IV: System Security

- Practical on OS finger printing using NMAP.

- Installation and secure configuration of E-mail server like send mail.

- Practical on useful utility for Security Administrator like Netcat, TCPdump, LSOf, Ngrep.

- Configuring Web Server

- Configuring File Servers

- Installation and Secure configuration of Database Server Oracle /MYSQL/Postgres.

- Practical on Intrusion Detection System using Snort/Tripwire.

- Practical on Firewall Testing using NMAP

- Configuring a Proxy Server using Squid

- Configuring a content filter using Dansguardian

Module - V: Cryptography and Network Security

- Symmetric Algorithm Analysis using Crypto tool

- Asymmetric Algorithm Analysis using Crypto tool

- Hash Algorithm Analysis using Crypto tool

- Digital Signature using Crypto tool

- Password Meter using Crypto tool

Module - VI: System and Device security

- Information Gathering

- Sniffing, ARP Cache Poisoning & MITM Attack

- Brute Force Attack Through John the Ripper

- Denial of Service Attack

- Securing DNS
- Securing Web Servers
- Securing Mail Server
- Configuring Wireless with Security
- Configuring IDS/IPS
- PKI Implementation using PGP
- Configuring Firewall

Module - VII: Mobile and Wireless Security

- To study installation and Configuration of Access Point.
- To study WLAN Setup using ADHOC mode.
- To study WLAN Setup using Infrastructure mode.
- To study Security implementation in WLAN.
- Detecting Wireless Network activity and security lack using Netstumbler.
- Using Access Point as a DHCP Server.
- To implement Wi-Fi Protected Access (WPA) security in WLAN.
- To implement wired Equivalent Privacy (WEP) Security in WLAN.
- To implement MAC Filtering security in WLAN.

Module - VIII: Database and Web Application Security

- MAC Spoofing through Kali Linux
- Hide Any Data into Images through Kali Linux (Steganography)
- DNS Spoofing through Kali Linux
- Brute Force Attack
- Command Injection Attack
- Cross Site Request Forgery (CSRF) Attack
- SQL Injection Attack
- XSS reflected Attack
- XSS Store Attack to study code review.
- System and Network Monitoring with Nagios/Zabbix
- MS-Baseline Security Analyzer
- Nesses/OpenVAS Auditing

Module - IX: Project

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Course Fees

Course fee is Rs. 21,000/- +GST as applicable. (Can be paid as a single instalment of Rs. 24,780/- or in 2 instalments as given below)

Registration Fee	Rs. 1000/- for SC-ST Adjustable against advance security deposit.	Rs. 1000/- for others	
Instalment No.	*SC-ST Candidates (Fee including GST in Rs.)	General Candidates (Fee including GST in Rs.)	Last Date
1	2500*	11,890.00*	24-11-2020
2	--	11,890.00*	21-01-2021
Total		23,780*	

* Tuition Fees are waived for eligible SC/ST students. However, they are required to remit an amount of Rs. 2,500/- as advance security deposit. This amount will be considered as 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 security deposits will be forfeited.

*GST is Applicable as per Govt. Norms GST (currently it is 18%).

Apart from above fee, following fee to be paid by all selected candidates (excluding SC-ST) directly while applying for registration/NSQF examination:

1. *NSQF registration fee of Rs. 200+GST=Rs. 236/- after admission during registration at the time of NSQF registration*
2. *NSQF Examination fee of Rs. 2600/- while registering for examination.*

Registration Fee

 (**non-refundable if candidate is selected for admission but did not join and if a candidate has applied but not eligible.**)

SC/ST: Rs. 1000/- for SC-ST, adjustable against advance security deposit.

Others: Rs. 1,000/-. (Adjustable with Total fee for candidates.)

However, the above registration fee shall be refunded on few special cases as given below

- ✓ Candidates are eligible but not selected for admission.
- ✓ Course postponed and new date is not convenient for the student.
- ✓ Course cancelled.

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Eligibility

✓ B.E./B.Tech.(CS/IT/Electronics/Electrical/Instrumentation) or Graduate in CS/Electronics/IT

Number of Seats: 60 (Two Hundred) - Total

Category	No. of Seats
SC (15%)	8
ST (7.5%)	4
OTHERS	48
Total	60

Note: Seats are allocated based on the merit of the Qualification.

How to Apply

Candidates can apply online in our website http://reg.nielitchennai.edu.in. Payment towards non-refundable registration fee can be paid through any of the following modes:

✓ Online transaction: Account No: 31185720641 Branch: Kottur (Chennai), IFS Code: SBIN0001669.

Note: *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*

Last date of Registration: 18th November, 2020

Registration Procedure

All interested candidates are required to fill the Registration form online with registration fees before 18th November, 2020 with all the necessary information.

Selection Criteria of candidates

The selection to the course shall be based on the following criteria:

Selection of candidates will be based on their marks in the qualifying examination subject to eligibility and availability of seats.

✓ The first list of Provisionally Selected Candidates will be published on NIELIT Chennai website (www.nielit.gov.in/chennai) on 19-11-2020 by **5:00 PM**. In case of vacancy, an additional selection list will be prepared and the selection will be intimated by email only.

✓ Provisionally selected candidate has to upload there document on registration portal for online verification.

✓ After document verification selected candidates have to pay first instalment of Rs. *11,890/-* on or before 24-11-2020 by payment mode mentioned above. Selected

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candidates are requested to upload the proof of remittance of fee on registration portal and also send the proof of remittance of fee as email to skjha@nielit.gov.in/trng.chennai@nielit.gov.in.

Admission: All provisionally selected candidates whose documents are verified and paid the fees (full or first instalment) and verified by accounts section of NIELIT Chennai will get a welcome message in his login id provided during registration. The credential and url for online portal will be shared through whatsapp or email.

Discontinuing the course

✓ No fees (including the security deposit) under any circumstances, shall be refunded in the event of a student who have completed the process of admission or discontinuing the course in between. No certificate shall be issued for the classes attended. Only Grade Sheet will be issued.

Course Timings: This program is a practical oriented one and hence there shall be more lab than theory classes. The classes and labs are online cloud based from 9.30 am to 5:30 pm and Monday to Friday.

Address:

> **National of Electronics and Information Technology**
> **ISTE Complex, No. 25, Gandhi Mandapam Road, Chennai – 600025**
> **E-mail: trng.chennai@nielit.gov.in/Phone: 044-24421445**
> **Contact Person: Training Officer, Mobile: 9445220125**

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.

Placement: Placement assistance is provided to students who qualify our courses.

Important Dates

> ➢ **Last Date of Registration:18-11-2020**
> ➢ **Display of Provisional Selection List: 19-11-2020**
> ➢ **Payment of first instalment fee: 19-11-2020 to 24-11-2020**
> ➢ **Course Start Date: 25-11-2020**

Examination & Certification

- ✓ Certification Body: Examination Section, NIELIT Chennai
- ✓ PG Diploma Certificates will be issued after successful completion of all the modules including mini project. For getting PG Diploma certificate a candidate has to pass each module individually with minimum required marks.

Examination

Examination scheme for each module is as follows:

Sl No	Examination Pattern	Modules Covered	Duration in Minutes	Maximum Marks
1	Theory Paper – 1	Module 1 and 2	90	100
2	Theory Paper – 2	Module 3 and 4	90	100
3	Theory Paper – 3	Module 5 and 6	90	100
4	Practical -1	Module 1, 2, 3, and 4	180	90
5	Practical -2	Module 5 and 6	180	90
6	Internal Assessment	Module 1, 2, 3, 4,5,6,7 and 8	150	60
7	Project/Presentation /Assignment	Module 9	-	60
8	Major Project/Dissertation	Module 9	-	100
	Total			**700**

Grading Scheme

Following Grading Scheme (on the basis of total marks) will be followed:

Grade	S	A	B	C	D	Fail
Marks Range (in %)	85 to 100	75 to 84	65 to 74	55 to 64	50 to 54	Below 50

Final Grading as per above grading scheme will be given on the basis of total marks obtained in all modules. For last module grade will be given on the basis of project demonstration.