

नेशनल इंस्टीट्यूट ऑफ इलेक्ट्रॉनिक्स एंड इंफॉर्मेशन टेक्नोलॉजी, चेन्नई

**National Institute of Electronics and Information Technology, Chennai**

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

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

# Course Prospectus

## Post Graduate Program in Information System Security

### Mode: Online



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## **Course Prospectus**

**Course Name:** Post Graduate Program in Information System Security

**Course Code:** IS 700

**NSQF Level:** Yet to be applied for renewal

**Duration:** 840 Hrs (6 Months)

**Last Date of Registration:** 31<sup>st</sup> August 2022

**Date of publishing Provisional Selection List:** 01<sup>st</sup> September 2022

**Payment of first instalment fee:** 02<sup>nd</sup> September 2022 to 06<sup>th</sup> September 2022

**Course Start Date:** 07<sup>th</sup> September 2022

### **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.

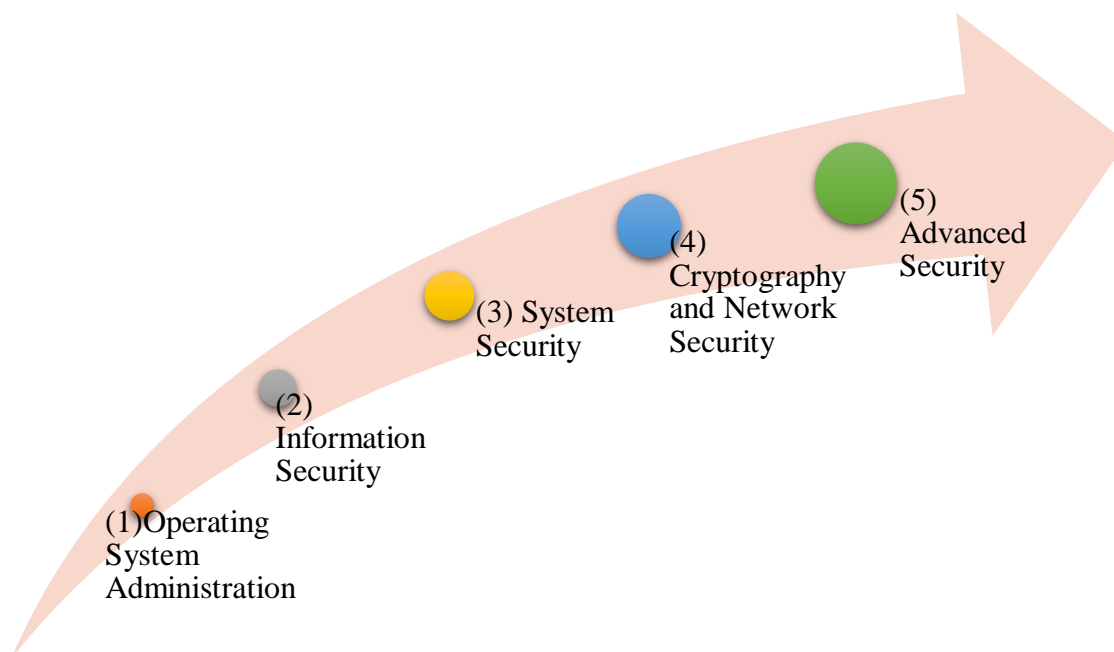
### **Objective of the Course:**

The Course is 840 Hrs (24 weeks) program aimed at molding candidates to Skilled Information System Security knowledge to maintain the Security of Systems and Networks in today's scenario.

### **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



**Course Structure:** This course contains total six modules. After completing the first five modules, the students have to do a 210 Hours project using any of the topics studied to earn the Post Graduate Program Certificate.

IS700	Module Name	Duration (in Hours)
<b>Module 1</b>	Networking Fundamentals	2 Weeks
<b>Module 2</b>	Operating System Administration	5 Weeks
<b>Module 3</b>	Cryptography and Security Concepts	3 Weeks
<b>Module 4</b>	Security Attacks	4 Weeks
<b>Module 5</b>	Advanced Security	5 Weeks
<b>Module 6</b>	Project Work	5 Weeks
<b>Total Duration</b>		24 Weeks

## Course Fees

### Registration Fee- Rs. 1000/-

**Course Fee:** Course fee is Rs. 42,000/- inclusive of GST as applicable (Can be paid as a single instalment of Rs. 42, 000/- or in 2 instalments as given below)

Registration Fee	Rs. 1000/- for SC-ST	Rs. 1000/- for Others	
Instalment No.	SC-ST Candidates (Fee including GST in Rs.)	For Other Candidates (Fee including GST in Rs.)	Last Date
1	20, 500.00	20, 500.00	06.09.2022
2	20, 500.00	20, 500.00	30.12.2022
<b>Total</b>	<b>42, 000.00</b>	<b>42, 000.00</b>	

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

### Registration Fee- Refund Policy:

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

However, the 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.

### Eligibility

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

### Number of Seats: - Total

Category	No. of Seats
<b>SC (15%)</b>	08
<b>ST (7.5%)</b>	04
<b>OTHERS</b>	48
<b>Total</b>	<b>60</b>

**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.
- ✓ Payment Gateway/GPAY/any UPI

**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:** **31<sup>st</sup> August 2022**

## Registration Procedure

All interested candidates are required to fill the Registration form online with registration fees before **31<sup>st</sup> August 2022** with all the necessary information.

## Selection Criteria of candidates

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](http://www.nielit.gov.in/chennai)) on **01<sup>st</sup> September 2022** 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 following document on registration portal for online verification :
- ✓ **For SC/ST :**
  - Original Copies of Proof of Age, Qualifying Degree (Consolidated Mark sheet & Degree Certificate/Course Completion Certificate), 10<sup>th</sup> and 12<sup>th</sup> mark sheets.
  - Self-attested copy of community certificate.
  - One passport size photograph.
  - **AADHAR Identity proof must for SC/ST Candidates** (For availing concession).
  - **Candidates under fee-waver category (SC-ST) have to give undertaking (notarized) through post indicating that they will not discontinue the course in between.**
- ✓ **For Others (General, OBC, EWS) :**
  - Original Copies of Proof of Age, Qualifying Degree (Consolidated Mark sheet & Degree Certificate/Course Completion Certificate), 10<sup>th</sup> and 12<sup>th</sup> mark sheet.
  - One passport size photograph.
  - Self-attested copy of Govt. issued photo ID card.
- ✓ After document verification selected candidates (other than SC-ST) have to pay first instalment of **Rs. 20,500/-** on or before **06<sup>th</sup> September 2022** by payment mode mentioned above.
- ✓ Selected 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 **pdheen@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.
- ✓ If candidates are not uploading consecutive 3 assignments within assigned time, then their candidature will be cancelled without any notice and all fees paid will be forfeited.
- ✓ If candidates are not appearing for any internal examinations/practical their candidature will be cancelled without any notice and all fees paid will be forfeited.

**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](mailto:trng.chennai@nielit.gov.in)/Phone: 044-24421445  
Contact Person: Dr. Munivel . E, Mobile: 9400055757

## 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:

Students who have completed the course successfully and qualified, Placement guidance and career counselling will be given to crack their interviews.

## Important Dates

- **Last Date of Registration: 31<sup>st</sup> August 2022**
- **Display of Provisional Selection List: 01<sup>st</sup> September 2022**
- **Payment of first instalment fee: 06<sup>th</sup> September 2022**
- **Course Start Date: 07<sup>th</sup> September 2022**
- **Payment of second instalment fee: with in 30<sup>th</sup> December 2022**



## Examination & Certification

- ✓ Final Certificates will be issued after successful completion of all the modules including mini project. For getting certificate a candidate has to pass each module individually with minimum required marks of 50%.

## Examination Pattern:

Examination scheme is as follows:

Theory (Each Question will carry 1 mark) Duration (in Min): 90		Practical			Internal Assessment (Marks)	Project / Presentation / Assignment (Marks)	Major Project/ Dissertation		Total
Papers	No. of Questions/ Paper	Papers	Duration (in Min)	Marks/Paper			No. Of Projects	Marks	
3	100	2	180	90	60	60	1	100	700

### Theory Papers

- **Theory 1** – Computer Networking & Operating System Administration
- **Theory 2** – Information System Security
- **Theory 3** – Cryptography, Network & Device Security

### Practical Papers

- **Practical 1** – Linux Service Setup
- **Practical 2** – Secure Service Setup

Means of Assessment						
	Theory	Practical	Internal Assessment	Project/ Presentation/ Assignment	Major Project/ Dissertation	
No of Papers	03	02	01	01	01	
Marks Each Paper	100	90	60	60	Presentation	Projects
					40	60
Total Marks	300	180	60	60	100	
					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.

## Faculty

Dr. Munivel E	Mr. Yatish Kumar P
<b>MTECH (CSE), PhD (CSE)</b>	<b>BE (CSE), PGDCC</b>
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## Detailed Syllabus

### Module1: Networking Fundamentals

- Introduction to Networking Fundamentals
- DNS/UDP
- ICMP/IP
- Simple HTTP and Embedded Object
- HTTP with Authentication
- DHCP with Bootproto
- TCP/IP

### Module 2: Operating System Administration

- Installing Windows Server
- Active Directory Configuration
- Managing Active Directory
- Managing Users, Groups & Permissions

- Setting File, Web Server
- Backup and Restore
- Introduction to Linux Fundamentals & Commands
- Browsing Filesystem
- Users, Groups and Permissions
- Basic System Configuration Tools
- Finding and Processing Files
- Investigating and Managing Processes
- Essential System Administration Tools
- System Initialization
- Package Management
- System Services
- Network Configuration
- Configuring DNS Server Setup
- Configuring Web Server Setup
- Web Server with Authentication Setup
- Configuring File, SAMBA and NFS Server
- Configuring Mail Server

### **Module 3: Cryptography and Security Concepts**

- Introduction to Cryptography
- Cryptography Concepts
- Configuring Secure DNS
- Configuring Secure Web Server
- Configuring Secure File Server
- Configuring Secure Mail Server
- Squid Proxy Server with Dansguardian
- Squid Proxy Server with ACL
- MySQL Server with phpMyAdmin
- Configuring Firewall
- PKP Implementation with PGP

## Module 4: Security Attacks

- Information Gathering
- Sniffing, ARP Cache Poisoning & MITM Attack
- Brute Force Attack Through John the Ripper
- Denial of Service Attack
- 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

## Module 5: Advanced Security

- IPSec
- MBSA with Audit
- Configuring Open VAS Server
- Configuring IDS with Snort
- Configuring Nagios Server
- Introduction to Log Monitoring and Analysis
- Introduction to Security Operations and Management
- Understanding Cyber Threats
- Methodology, Incidents, Events and Logging
- Incident Detection with Security Information and Event Management
- Enhanced Incident Detection with Threat Intelligence, Incident Response.
- Digital and Mobile Forensics
- Security Frameworks

## Module 6: Project Work

- Problem Definition and Architectural Development
- Requirement Analysis
- Security Server Selection
- Configuring Server
- Final Design & Deployment Phase
- Testing Phase