

COURSE PROSPECTUS

**Name of the Group:** *IT Group*

**Name of the Course:** *PG Diploma in Information System Security*

**Course Code:** *SW600*

**Starting Date:** *26<sup>th</sup> March 2018*

**Duration:** *24 Weeks*

**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 a 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.*

**Course Structure:**

<i>Course &amp; Modules Name</i>		
<i>SW600: PG Diploma in Information System Security</i>		<i>Duration</i>
<i>Modules</i>	<i>Networking Fundamentals with Practical</i>	<i>24 weeks</i>
	<i>Operating System Administration with Practical</i>	
	<i>Information Security with Practical</i>	
	<i>System Security with Practical</i>	
	<i>Cryptography &amp; Network Security with Practical</i>	
	<i>System &amp; Device Security with Practical</i>	
	<i>Mobile &amp; Wireless Security with Practical</i>	
	<i>Database &amp; Web Application Security with Practical</i>	
	<i>Project with VTE Lab</i>	

*Other Contents*

a. **Course Fees :**

**General Candidates:** Course Fee is ₹ 60,000/- + GST at actuals

**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 ₹ 7080/- 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

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:**

Students can pay the full fees of is ₹ 70,800/- (is ₹ 60,000/- + GST) in advance or as installments as given below

<b>Fees</b>	<b>*Amount for General Candidates</b>	<b>Amount for SC/ST Candidates</b>	<b>Due Date (on or before)</b>
**Advance Fee	₹ 10000/-	₹ 7080/- (refundable after successful completion of course)	21-Mar-2018
1 <sup>st</sup> Installment	₹ 25400/- (if advance deposit paid) else ₹ 35400/-	Nil	26-Mar-2018
*** 2 <sup>nd</sup> Installment	₹ 35400/-	Nil	30-May-2018

\* Above fees is inclusive of GST @ actuals (18%) and revision if any will be applicable at the time of payment.

\*\* Advance fee - After publication of first selection list, the students in the first selection list have to pay the Advance Deposit within one week to take the provisional admission. Students in the additional selection should pay both Advance and First installment fee together on or before counseling day

\*\*\* 2<sup>nd</sup> Installment last date is 30<sup>th</sup> May-2018

Fine will be applicable to late fee payment as given below

<b>Sl. No.</b>	<b>Description</b>	<b>Fine</b>
1	Late fee payment within two weeks after due date	18% (annually) of the outstanding dues

2	After second week of due date the candidate has to pay readmission fees along with the fine	Readmission fee ₹250/- plus fine of 18% (annually) of the outstanding dues
3	The candidate has to discontinue the course after third week from the due date	

d. Eligibility: *Diploma in IT/Electronics/ECE Passed OR NIELIT 'A' Level or Any Graduate in CS/Electronics/IT with mathematical back ground OR B.Tech. (CS/IT/Electronics/Electrical/Instrumentation) undergoing (Final Year Students may also apply)*

e. Number of Seats : 40

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

*Rs.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: *Selection of candidates who have passed in the qualifying examination will be based on their marks in the qualifying examination subject to eligibility and availability of seats.*

*The admission to the course shall be based on the following criteria:*

1. *Should have passed the eligibility criteria as mentioned above.*
2. *The list of selected students shall be published in our web site. Individual call letters by **email or SMS** will be sent to the candidates.*

3. *The admission for the selected students shall be confirmed only after verifying their original certificates. The verification of certificates for such candidates shall be on the date of counseling.*

h. Test/Interview: *Not applicable*

i. Counseling/Admission : **26<sup>th</sup> March 2018**

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 : *9.45 A.M to 01.00 PM and 02.00 PM to 5.00 PM [Monday – Friday]*

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 ₹ 17/- 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 35°C and 20°C.

- 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.

**Telephone Numbers:**

Office	0495 - 2287266 / 2287268
Director's Office	0495 - 2287123
Training Officer	0495 - 2287266
IS500 Course Coordinator	0495 - 2287266 (239)
Office Fax	0495 - 2287168
E-mail:	<a href="mailto:trng@calicut.nielit.in">trng@calicut.nielit.in</a>
Website:	<a href="http://www.calicut.nielit.in">www.calicut.nielit.in</a>

- p. Important Dates (if applicable) :

Last date to apply online/offline with Reg. fee	<b>14<sup>th</sup> March 2018</b>
Date of Selection list publication	<b>14<sup>th</sup> March 2018 (5:30 PM)</b>
Last date to pay the advance fee (Rs. 10,000/-)	<b>21<sup>st</sup> March 2018</b>
Counseling/Admission	<b>26<sup>th</sup> March 2018</b>
Last date to pay the first installment	<b>26<sup>th</sup> March 2018</b>
Commencement of classes	<b>27<sup>th</sup> March 2018</b>
Last date to pay the second installment	<b>30<sup>th</sup> May 2018</b>

- q. Placement: Placement support will be provided, almost all the eligible students placed/working in Cisco, Intel, AT&T, Citrix, Pricewaterhousescoopers, SISA, HCL, Kane, NTT DATA, Sify, Infosys, Kuliza Technologies, NIT, IIM-K, CSI and IDRBT.

- r. Hostel facilities: Hostel accommodation is available for boys and girls on monthly or daily chargeable basis. The hostel fee varies from Rs.1,400/- to Rs.1,500/- 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 @Rs.130/- per day. An amount of Rs.1,000/- 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.

An amount of Rs.3,000/- 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 IT Lab is equipped with Intel Xeon Dual Processor based servers from HP, IBM, DELL, HCL, managed gigabit switches and more than 100 networked PCs with internet facility. SaaS, PaaS and IaaS open source cloud servers. A variety of software is available which include various flavors of Windows and Linux Operating Systems like Windows, RedHat Enterprise Linux/CentOS 6/7, RT Linux,

*OpenStack, CloudStack, OpenVAS/Nessus and various commercial and open source development tools, database and cloud servers.*

u. Course Contents :

*Module – I: Networking Fundamentals*

- I. Introduction to ISO & TCP/IP Stack*
- II. DNS/UDP/IP*
- III. TCP/HTTP/HTTPS*
- IV. ICMP/DHCP*
- V. Cabling*
- VI. Addressing*
- VII. Managing Basic Switches*
- VIII. Managing Advanced Switches*
- IX. Managing Basic Routers*

*Module – II: Operating System Administration*

- I. Installing Windows Server*
- II. Setting Active Directory*
- III. Managing Active Directory*
- IV. Managing User & Group*
- V. Setting File, Web Server*
- VI. Backup and Restore*
- VII. Introduction to Linux Fundamentals & Commands*
- VIII. Advanced Linux Commands*

*Module – III: Information Security Concepts*

- I. Introduction to Information Security*
- II. Configuring SSH*
- III. Configuring DNS Server*
- IV. Practical on Discovery and scanning techniques (who is domain search query, ping, nslookup, traceroute, visual traceroute, DNS query).*
- V. Configuring Web Server with Virtual Hosting*
- VI. Practical on Packet Sniffing tool Ethereal.*
- VII. Practical on password cracking tools john crack, Lophcrack.*
- VIII. Practical on Denial of Service, IP spoofing.*
- IX. Practical on network vulnerabilities assessment tool NMAP.*
- X. Practical on ftp and telnet hacking*

*Module – IV: System Security*

- I. Practical on OS finger printing using NMAP.*
- II. Installation and secure configuration of E-mail server like send mail.*
- III. Practical on useful utility for Security Administrator like Netcat, TCPdump, LSO, Ngrep.*
- IV. Configuring Web Server*



- V. *Configuring File Servers*
- VI. *Installation and Secure configuration of Database Server Oracle /MYSQL/Postgres.*
- VII. *Practical on Intrusion Detection System using Snort/Tripwire.*
- VIII. *Practical on Firewall Testing using NMAP*
- IX. *Configuring a Proxy Server using Squid*
- X. *Configuring a content filter using Dansguardian*

*Module - V: Cryptography and Network Security*

- I. *Symmetric Algorithm Analysis using Crypto tool*
- II. *Asymmetric Algorithm Analysis using Crypto tool*
- III. *Hash Algorithm Analysis using Crypto tool*
- IV. *Digital Signature using Crypto tool*
- V. *Password Meter using Crypto tool*

*Module - VI: System and Device security*

- I. *Information Gathering*
- II. *Sniffing, ARP Cache Poisoning & MITM Attack*
- III. *Brute Force Attack Through John the Ripper*
- IV. *Denial of Service Attack*
- V. *Securing DNS*
- VI. *Securing Web Servers*
- VII. *Securing Mail Server*
- VIII. *Configuring Wireless with Security*
- IX. *Configuring IDS/IPS*
- X. *PKI Implementation using PGP*
- XI. *Configuring Firewall*

*Module - VII: Mobile and Wireless Security*

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

*Module - VIII: Database and Web Application Security*

- I. *MAC Spoofing through Kali Linux*
- II. *Hide Any Data into Images through Kali Linux (Steganography)*
- III. *DNS Spoofing through Kali Linux*
- IV. *Brute Force Attack*
- V. *Command Injection Attack*

- VI. *Cross Site Request Forgery (CSRF) Attack*
- VII. *SQL Injection Attack*
- VIII. *XSS reflected Attack*
- IX. *XSS Store Attack to study code review.*
- X. *System and Network Monitoring with Nagios/Zabbix*
- XI. *MS-Baseline Security Analyzer*
- XII. *Nesses/OpenVAS Auditing*

*Module - VIII: Project*

**Project:** During the 6 weeks project period students are required to Develop/Configure a Cloud/Security Server in any of the areas covered in the course, under the guidance of the faculty. Students can also take up relevant projects from the industry.

<b>No.</b>	<b>Project Phases</b>	<b>Duration</b>	<b>Marks</b>
1	<i>Analysis &amp; Design</i>	<i>Two Weeks</i>	<i>30 Marks</i>
2	<i>Configuration</i>	<i>Three Weeks</i>	<i>40 Marks</i>
3	<i>Testing and Documentation</i>	<i>One Week</i>	<i>20 Marks</i>
4	<i>Viva voice</i>		<i>10 Marks</i>
	<b>Total</b>		<b>100 Marks</b>