

COURSE PROSPECTUS

Name of the Group: *IT Group*

Name of the Course: *PG Diploma in Information Security and Cloud Computing*

Course Code: *SW500*

Starting Date: **9th March 2016**

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 six months program aimed at molding candidates to Skilled System/Cloud Engineer with Information Security knowledge to maintain the Systems, Networks and cloud infrastructure in today's scenario.

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

Course Structure:

Course & Modules Name		
SW500: PG Diploma in Information Security and Cloud Computing		Duration
Modules	<i>System and Network Administration (6 Weeks)</i>	24 weeks
	<i>Cloud Computing with Virtualization (6 Weeks)</i>	
	<i>Advanced Security Management (System, Network & Cloud) (6 Weeks)</i>	
	<i>Project (6 Weeks)</i>	

Other Contents

a. Course Fees :

General Category Applicants: Course Fee is ₹ 60,000/- plus service tax at actual
The course fee can be paid in installments as follows,

Fees	For General Students (Service Tax Extra)	For SC/ST Students	Last Date to Pay Fees
<i>Advance Fee*</i>	₹ 10000/-	₹ 6840/-**	04-Mar-2016
<i>1st Installment</i>	₹ 20000/-	Nil	09-Mar-2016
<i>2nd Installment</i>	₹ 30000/-	Nil	30-May-2016

****For SC/ST Category Applicants:** Tuition Fees/Examination fees are waived for SC/ST students. However they are required to remit an amount of ₹ 6840/-. 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.

b. Course Fee Installment Structure:

1. Deposit at the time of Course Registration of Rs.1000/- will be considered as caution deposit on student joining the course.

2. Fee Installment structure for PG/Advanced Diploma programs is as follows:

***Advance Deposit:** Rs.10000/- for PG Diploma Programs.

(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)

First Installment: 50 % of Course fee (which includes advance deposit of Rs.10000/- or Rs.5000/- depending upon the type of course) plus service tax at actual. **First installment should be paid on or before counseling date.**

Second Installment: Remaining 50% of Course fee plus service tax at actual. Second Installment should be paid within two months after commencement of the course.

3. SC/ST Candidates should pay 10% of total fee as Advance deposit for taking provisional admission. 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, subject to approval of Director on case to case basis.

4. For all other courses single payment of course fee plus service tax.

c. Eligibility: *ME / MTech, BE / BTech, MCA, MSc / BSc (IT / Computer Science / Electronics) or equivalent of any of these.*

d. Number of Seats : 25

e. How to Apply :

Students are advised to apply in the prescribed Application Form available with the course brochure/course prospectus or downloaded from our website. Filled-in application forms along with a Demand Draft (or pay-in-slip) towards advance fee of Rs.1,000/- drawn in favour of Director, NIELIT, Calicut, Payable at State Bank of India, NIT Campus Branch (code: 2207), Chathamangalam should be sent to the **Training Officer, NIELIT, P. B. No. 5, NIT Campus Post, CALICUT – 673 601, Kerala. The Name of the Course Applied for should be super scribed on the top of the cover in which the application form is forwarded.**

Modes of Payment: The course fee can be paid by one of the following methods as per your convenient.

1	Demand Draft to be drawn in favor of Director, NIELIT, Payable at State Bank of India, Calicut NIT Branch (2207). The DD should reach here before the last date to apply.
2	Through any branch of SBI (where this format is accepted) using the pay in slip available in our web site. The original counterfoil should reach here before the last date to apply.
3	<p>The fees can be paid directly into our account from any bank where core banking facility is available. The details required for direct payment are as given below.</p> <ul style="list-style-type: none"> • Savings Account No: 31329537747 • Bank Name: SBI, NIT Chathamangalam • Bank Code: 2207 • IFSC No: SBIN0002207 • MICR : 673002012 <p>The depositor should obtain the UTR Number/Journal No from the branch while depositing cash directly into our account. Depositor should also obtain the counterfoil duly filled up and signed by the staff with seal of the bank through which the amount was deposited. The following details should reach here before the last date to apply.</p> <ol style="list-style-type: none"> 1. Name of the Depositor 2. Name of the Student 3. Date of Payment 4. Amount Deposited 5. Name of Bank/branch through which amount deposited 6. Purpose – Course ID – Advance Deposit/Hostel Rent/Installment Fee etc. 7. Proof of Deposit (counterfoil/acknowledgement in original) 8. UTR Number
4	<p>The fees can be paid through the SBI Collect Payment Gateway as well:</p> <ol style="list-style-type: none"> 1. Please click the SBI Collect hyper link to enter the payment gateway. 2. Select State of Corporate/Institution as <i>Kerala</i> 3. <i>Select</i> Type of Institution <i>Educational Institutions</i> and click on <i>Go</i> button 4. <i>Select Educational Institutions Name as NIELIT and click Submit button</i> 5. Select Payment Category as <i>Course Fee</i> 6. Enter all the fields including amount payable and follow the instructions <p>The following details should reach here before the due dates.</p> <ol style="list-style-type: none"> 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.

- f. 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 alone** 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.*

- g. Test/Interview (if applicable) : *Not applicable*

- h. Counseling/Admission : **9th March 2016**

- i. 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 further extension of course.

- j. 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. Attested Copies of Proof of Age, Qualifications, etc
2. Original Certificate of the above
3. Two copies of photograph and one stamp size photograph for identity card.
4. SC/ST Certificate (if applicable)
5. Income Certificate (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 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.

- k. Discontinuing the course: No fees under any circumstances shall be refunded in the event of a student discontinuing the course. 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 has paid the entire course fees.

- l. Course Timings : 9.45 A.M to 01.00 PM and 02.00 PM to 5.00 PM [Monday – Friday]

- m. 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 Kunnammangalam) 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 ₹.15/- 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.

- n. 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).

Telephone Numbers:

Office 0495 - 2287266 / 2287268
Director's Office 0495 - 2287123
Training Officer 0495 – 2287266
SW500 Course Coordinator 0495 – 2287266 (239)
Office Fax 0495 - 2287168
E-mail: trng@calicut.nielit.in
Website: www.calicut.nielit.in

- o. Important Dates (if applicable) :

<i>Last date to apply online/offline with Registration fee:</i>	29th February 2016
<i>Date of Selection list publication:</i>	29th February 2016
<i>Last date to pay the advance fee (₹ 10,000/-):</i>	04th March 2016
<i>Counseling/Admission:</i>	09th March 2016
<i>Last date to pay the first installment:</i>	09th March 2016
<i>Commencement of classes:</i>	10th March 2016
<i>Last date to pay the second installment:</i>	30th May 2016

- p. Placement : Placement support will be provided, Almost all the eligible students placed/working in Cisco, AT&T, Citrix, Pricewaterhousescoopers, SISA, HCL, Kane, NTT DATA, Sify and Kuliza Technologies

- q. Hostel facilities: Hostel accommodation is available for boys and girls on daily or monthly chargeable basis. The hostel fee varies from Rs.850/- to Rs.1,300/- (for boys) per month and Rs.1,000/- to Rs.1,400/- (for Girls) per month depending on the location 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.

- r. *Canteen facilities:* Canteen facility is available and students staying in the hostel should pay monthly mess fee @ ₹ 90/- per day. An advance amount of ₹1000/- should be paid at the time of joining the mess which will be adjusted in the last month mess fee.
- s. *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 6, RT Linux, OpenStack, CloudStack, OpenVAS/Nessus and various commercial and open source development tools, database and cloud servers.
- t. Course Contents :
1. **System & Network Administration** **(6 Weeks)**
 - a. *Network Protocol Analysis* *(1 Week)*
 - i. *Introduction to ISO & TCP/IP Stack*
 - ii. *DNS/UDP/IP*
 - iii. *TCP/HTTP/HTTPS*
 - iv. *ICMP/ARP/RARP/DHCP*
 - b. *Network Management* *(1 Week)*
 - i. *Cabling*
 - ii. *Addressing*
 - iii. *Managing Basic Switches*
 - iv. *Managing Advanced Switches*
 - v. *Managing Basic Routers*
 - c. *Windows Server Administration* *(1 Week)*
 - i. *Installing Windows Server*
 - ii. *Setting Active Directory*
 - iii. *Managing Active Directory*
 - iv. *Managing User & Group*
 - v. *Active Directory Security & Policy*
 - vi. *Setting File, Web and DHCP Server*
 - d. *Linux Server Administration with Shell Scripting* *(3 Weeks)*
 - i. *Introduction to Linux Fundamentals & Commands*
 - ii. *Advanced Linux Commands*
 - iii. *Regular Expression with Text Processing*
 - iv. *Bash Scripting*
 2. **Cloud Computing with Virtualization** **(6 Weeks)**
 - a. *Virtualization Basics* *(2 Weeks)*
 - i. *Introduction to Virtualization*
 - ii. *Virtualization Tools*

- iii. *Xen Virtualization*
- iv. *KVM Virtualization*
- b. *Cloud Computing with SaaS & PaaS Deployment* (2 Weeks)
 - i. *Introduction to Cloud Computing*
 - ii. *Types of Cloud Services*
 - iii. *Introduction to SaaS Cloud*
 - iv. *SaaS Cloud Deployment with Open Source Tools*
 - v. *Introduction to PaaS Cloud*
 - vi. *PaaS Cloud Server Deployment with Google App Engine/Aneka*
- c. *Advanced Cloud Infrastructure* (2 Weeks)
 - i. *Introduction to IaaS Cloud*
 - ii. *Types of Cloud Deployment with Xen/KVM*
 - iii. *Setting Private Cloud with Windows*
 - iv. *Setting Private Cloud with OpenStack*
 - v. *Deployment with Public Cloud*
- 3. Advanced Security Management (System, Network & Cloud)** (6 Weeks)
 - a. *Information Security Basics* (1 Week)
 - i. *Access Control*
 - ii. *Cryptography*
 - iii. *Cryptography Algorithm Analysis*
 - iv. *Network Security*
 - b. *Advanced Linux Server Configuration with Security* (2 Weeks)
 - i. *Configuring DNS Server*
 - ii. *Securing DNS*
 - iii. *Configuring Web Server with Virtual Hosting*
 - iv. *Securing Web Servers*
 - v. *Configuring MySQL Server with phpMyAdmin*
 - vi. *Configuring Authentication Server*
 - vii. *Configuring Mail Server*
 - viii. *Securing Mail Server*
 - ix. *Configuring File Servers (FTP/SAMBA/NFS)*
 - c. *Advanced Security Configuration* (2 Weeks)
 - i. *Proxy with Content Filtering*
 - ii. *Configuring Firewall*
 - iii. *Configuring Wireless with Security*
 - iv. *Configuring IDS/IPS*
 - v. *Honey Pot/Honey Net*
 - vi. *PKI Implementation*
 - d. *Security Monitoring & Auditing* (1 Week)
 - i. *System, Network & Cloud Monitoring with Nagios/Zabbix*

- ii. *MS-Baseline Security Analyzer*
- iii. *Nessus/OpenVAS Auditing*
- iv. *Cloud Security Best Practices*
- v. *Introduction to ISO 27001 ISMS Audit Standards*

4. Project

(6 Weeks)

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.

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