



**NATIONAL INSTITUTE OF ELECTRONICS AND INFORMATION TECHNOLOGY  
(NIELIT), CALICUT**

(Formerly DOEACC CENTRE CALICUT)

CDS/CA/7.5.1/F 40/R1

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

**Name of the Course:** *PG Diploma in Networking & Mobile Computing Security*

**Course Code:** *SW600*

**Starting Date:** *29<sup>th</sup> Feb 2012*

**Duration:** *6 Months*

**Preamble:** This program prepares the students in a wide range of computing & networking skills. They will gain hands on experience with the hardware and software used in personal computers, learn to manage and direct network traffic, and will develop system support skills that focus on installing, administering and troubleshooting commonly used network hardware and software.

**Objective of the Course:** The Course is a six months program aimed at molding candidates to Skilled Network Administrator with Information Security knowledge to maintain the Switch, Routers and Firewalls in today's scenario.

**Outcome of the Course:** This skill oriented course provides candidates with information required for maintenance and administration of Computer Network and also equip them with the skills required to protect & recover the computer systems & networks, Routers & Switches from various security threats.

**Eligibility:** BE/BTech, BSc/MSc(IT/Computer Science/Electronics), MCA, BCA, BCom (CA), MBA (System) or equivalent of any of these. Degree holders with PGDCA, DOEACC A or B level, Diploma in Computer Science, Electronics, or others with relevant experience).

**Course Structure:**

<i>Code</i>	<i>Module Name</i>	<i>Duration</i>
<i>SW601</i>	<i>Advanced Diploma in Computer Network Security [Includes CCNA &amp; CCNA Sec, CCNP &amp; CCNP Sec]</i>	<i>3 Months [29<sup>th</sup> Feb 2012]</i>
<i>SW602</i>	<i>Advanced Diploma in Wireless &amp; Mobile Security [Includes CCNA Wireless, CCNP Wireless &amp; SANS Sec]</i>	<i>3 Months [30<sup>th</sup> May 2012]</i>

**Other Contents:**

Course Fees in installments :

<i>No of Installments</i>	<i>For General Category Students (Service Tax Extra)</i>	<i>For SC/ST Students<sup>#</sup> (Service Tax Extra)</i>
<i>1<sup>st</sup> Installment</i>	<i>Rs 15000/-</i>	<i>Rs 2200/-</i>
<i>2<sup>nd</sup> Installment</i>	<i>Rs 30000/-</i>	<i>Nil</i>

***#Tuition Fees/Examination fees are waived for SC/ST students.***



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b. Mode of Payments :

1. Demand Draft to be drawn in favor of Director, National Institute of Electronics & Information Technology Calicut, Payable at State Bank of India, Calicut NIT Branch(2207). The DD should reach here before the last date to apply.
2. Using the pay in slip available in our web site ([Pay in slip](#)), through any branch of SBI (where this format is accepted). The **original counterfoil** should reach here before the last date to apply.
3. 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.
  - Account No: 31732177476
  - Bank Name: SBI, NIT Chathamangalam
  - Bank Code: 2207
  - IFSC No: SBIN0002207
  - MICR Code:673002012

*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.*

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

c. Number of Seats : 40

d. 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 towards advance fee of Rs.1000/- drawn in favour of Director, NIELIT Calicut, Payable at State Bank of India, NIT Branch, Chathamangalam should be sent to the **Training Officer, NIELIT Calicut, 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.**

e. 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:*



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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 commencement of examination. Fee shall be refunded for those whose credentials are found to be incorrect.*
- f. Test/Interview (if applicable) : *Not Applicable*
- g. Counseling/Admission : **29<sup>th</sup> Feb 2012**
- h. Admission Procedure : *Students who have been selected for test/interview/counseling/admission are required to report to the Centre 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. *The SC/ST students are required to submit in **ORIGINAL** a **Community Certificate ( in English or Hindi only)** issued by an Officer not below the rank of Tahsildar.*
- The students on reaching the Centre 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 section for payment of fees. A student is thus admitted.*
- i. 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) modules he has successfully completed provided he has paid the entire course fees.*
- j. Course Timings : *9.30 A.M to 12.45 PM and 2.00 P.M to 5.15 PM [Monday – Friday]*
- k. Location and How to reach : *National Institute of Electronics & Information Technology Calicut, is located very near to NIT (REC) campus and is about 22Kms from Calicut (Kozhikode) city. A number of buses [Buses to NIT via Kunnamangalam] are available from "Palayam Bus Stand or KSRTC Bus Stand". Our stop is called "Panthrand" & is one stop before NIT. The bus fare is Rs.13/- from Calicut City to NIELIT Calicut and is on the right side. Calicut (Kozhikode) is well connected by Rail, Road and Air form different parts of the country. The maximum and minimum temperatures range between 35° and 20°.*
- l. Course enquiries : *Students can enquire about the various courses either on telephone or by personal contact between 9.30 A.M. to 5.15 P.M. (Lunch time 1.00 pm to 1.30 pm).*

**Telephone Numbers:**

Office 0495 - 2287266 / 2287268



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Director's Office 0495 - 2287123
Training Officer 0495 - 2287266
SW600 Course Coordinator 0495 - 2287266 (239)
Office Fax 0495 - 2287168
E-mail: trng@doeaccalicut.ac.in
Website: www.doeaccalicut.ac.in

m. Important Dates (if applicable) :

Last date to submit application form: 22/02/12
Selection intimation in website: 22/02/12
Last date to pay Ith Installment Fees: 27/02/12
Counseling/Admission: 29/02/12
Commencement of classes: 29/02/12
Last date to pay IIth Installment Fees: 26/03/12

n. Placement : Placement support will be provided

o. Hostel facilities : Hostel Facility is available for boys and girls on daily or monthly chargeable basis. 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. The hostel fees varies from Rs.650 to Rs.1050 on monthly chargeable basis depending on the location of the accommodation and facilities available. Caution deposit to the tune of Rs.500 is required to be deposited in addition to the hostel fee.

p. Canteen facilities : The Institute has a canteen functioning at the main campus and food at reasonable rates is available for breakfast, lunch, and dinner.

q. Lab Facilities: The IT Lab is equipped with Intel Xeon Dual Processor based servers from HP,IBM,DELL,HCL, CISCO Routers, Advanced Switches, Hardware Firewalls, managed gigabit switches and more than 100 networked PCs with internet facility. A variety of software is available which include various flavors of Windows and Linux Operating Systems like Windows 2008, RedHat Enterprise Linux 5/6, RT Linux and various commercial and open source development tools and database servers.

r. Course Contents :

Table with 3 columns: SW601, Advanced Diploma in Computer Network Security, 3 Months

1. Computer Fundamentals [5 Days]

- I. Overview of PC architecture
II. Different bus standards (ISA, PCI, PCMCIA)
III. Different Add-on Cards like memory, Graphics etc.



**2. OS Fundamentals [5 Days]**

- I. Operating System Introduction
- II. OS Architecture
- III. Process Management
- IV. Memory Management
- V. File System Management
- VI. Introduction to Network OS

**3. Networking Fundamental [5 Days]**

- I. Basics of Communication Systems
- II. Transmission Media
- III. OSI Layer
- IV. Local Area Networks
- V. Wide Area Networks
- VI. Networking Protocols
- VII. IP addressing & Routing

**4. Windows Fundamentals [5 Days]**

- I. Introduction to Windows Operating System
- II. Installation and Configuration of Windows XP & Windows 7

**5. Linux Fundamentals [5 Days]**

- I. Introduction to Linux, Unix & Solaris
- II. File System
- III. Linux Installation
- IV. Simple Commands

**6. Advanced Networking [10 Days]**

- I. OSI Layers & Protocols
- II. TCP/IP
- III. UDP/IP
- IV. ICMP
- V. Ethernet Packets
- VI. Internetworking Devices (Hub, Switch, Router etc.)
- VII. Wireless Networks Basics

**6. Cryptography and Network Security [10 Days]**

- I. Introduction
- II. Classical Encryption Techniques
- III. Mathematics Fundamentals associated with cryptography
- IV. Symmetric ciphers
- V. Asymmetric ciphers
- VI. Internet Security Protocols
- VII. User Authentication and Kerberos
- VIII. Electronic Mail Security Basics
- IX. IP Security Basics



X. Firewalls and Virtual Private Networks (VPN) Basics

**7. System and Device security [15 Days]**

**I. Operating System Threat**

- I. Program Security
- II. Fascination of Malicious Code Analysis
- III. Malicious Code Environment
- IV. Classification of Infection Strategies
- V. Strategies of Computer Worm

**II. Securing OS from Threats**

- I. Antivirus Techniques
- II. Advanced Antivirus Techniques
- III. Case Studies

**III. Device Security**

- I. Introduction to Network Infrastructure Security
- II. Switch Security
- III. Router Security
- IV. DNS Security
- V. ADSL Security
- VI. Cable Modem Security
- VII. Protecting Network Infrastructure- A new approach

**8. Mini Project**

<b>SW602</b>	Advanced Diploma in Wireless & Mobile Security	3 Months
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**1. Database and Web Applications Security [15 Days]**

- I. Securing Network Applications [Web, DNS, MySQL]
- II. Fundamental of Web Application Security
- III. Core Defense Mechanisms
- IV. Web Application Technologies
- V. Client-side Exploit Frame Work
- VI. Bypassing Client-side Controls
- VII. Web Based Malware
- VIII. Securing Authentication
- IX. Securing Session Management
- X. Securing Access Controls
- XI. Securing Application Architecture
- XII. Web Server and Web Application Testing with Back Track
- XIII. Securing Web Based Services
- XIV. DB Integrity
- XV. DB Access Control
- XVI. Database Auditing



**2. Mobile and Wireless Network Security [45 Days]**

**I. Wireless Technology [5 Days]**

- II. Wireless Fundamentals
- III. Wireless Network Logical Architecture
- IV. Wireless Network Physical Architecture
- V. Wireless LAN Standard

**II. Security for Mobility [15 Days]**

- I. PKI in Mobile Systems
- II. Personal PKI
- III. Smartcard as a Mobile Security Device
- IV. Secure Mobile Tokens-The Future
- V. Universal Mobile Telecommunications System(UMTS)Security
- VI. Securing Network Access in Future Mobile System
- VII. Security Issues in a MobileIPV6 Network
- VIII. Mobile Code Issues
- IX. Secure Mobile Commerce

**III. Wireless Network Security [15 Days]**

- I. Security in Traditional Wireless Network
- II. Wireless LAN Security
- III. Security in Wireless Ad-hoc Network
- IV. Implementing Basic Wireless Security
- V. Implementing Advanced Wireless Security

**IV. Other Wireless Technology [10 Days]**

- I. Home Network Security
- II. Wireless Embedded System Security
- III. RFID Security
- IV. Security Issues in Single Hop Wireless Networks
- V. Security Issues in Multi Hop Wireless Networks

**3. Mini Project**

*Project: During the mini project period students are required to Develop/Configure a security tool 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 for each Phase
1	Analysis & Design	Last four weeks of Each module, no separate time for project	25 Marks
2	Coding/Tool Design		25 Marks
3	Testing and Implementation		25 Marks
4	Viva voice		25 Marks
	<b>Total</b>		<b>100 Marks</b>