राष्ट्रीय इलेक्ट्रॉनिकी एवं सूचना प्रौद्योगिकी संस्थान, चेन्नई
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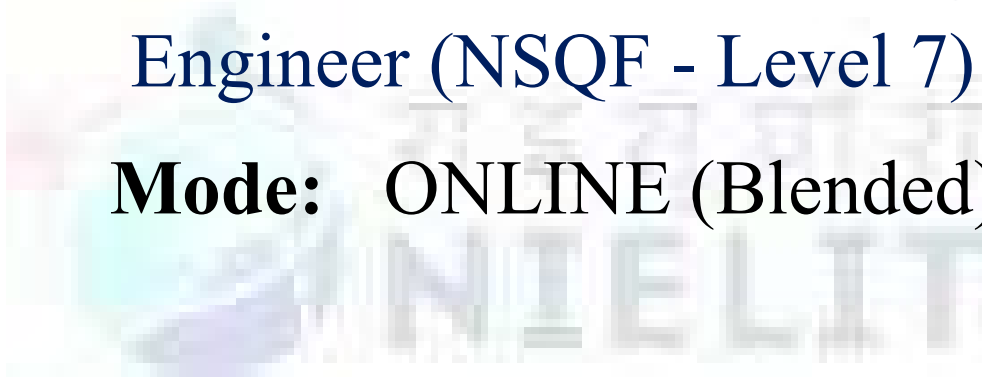
Autonomous Scientific Society of Ministry of Electronics & Information Technology (MeitY), Govt. of India

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

Course Prospectus

Certified Cloud Computing Engineer (NSQF - Level 7)

Mode: ONLINE (Blended)

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Course Prospectus

Name of the Group: Cloud Computing

Course Name: Certified Cloud Computing Engineer

Course Code: IS 800

NSDA CODE: NIELIT/IT/L8/027

NSQF LEVEL: 07

Duration: 840 Hours, 6 Months

Last Date of Registration: 18-08-2021

Display of Provisional Selection List: 19-08-2021

Payment of first instalment fee: 20-08-2021 to 24-08-2021

Course Start Date: 25-08-2021

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. (6 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.

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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.

Full Flow of Course
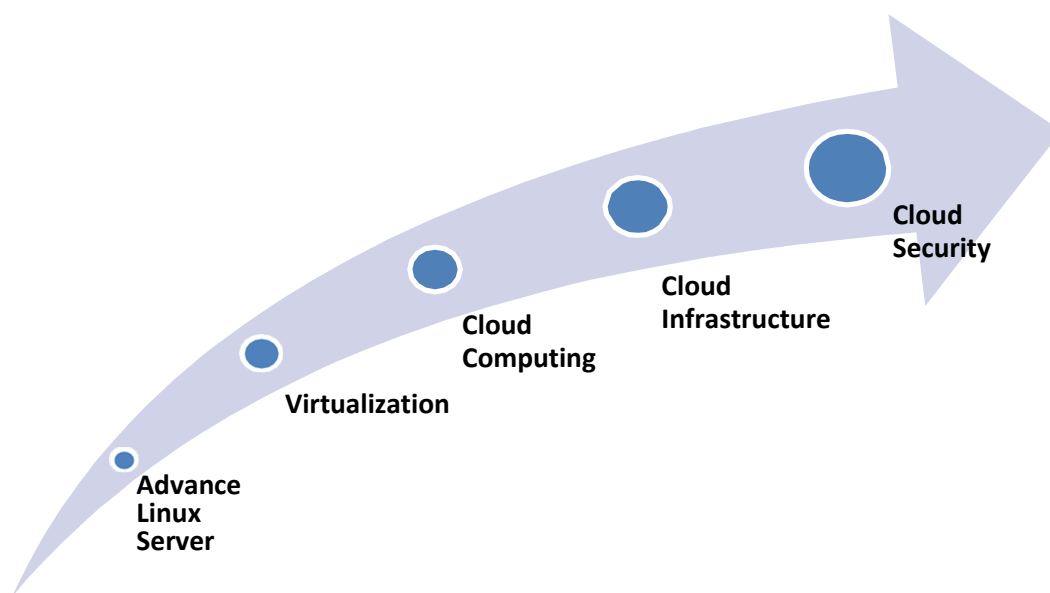
Course Structure

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 Certification.

Sl. No.	Module Name	Duration (in Weeks)
1	Introduction to Network Management	2 Weeks
2	Introduction to Windows &Linux Server	3 Weeks
3	Advance Linux Server	3 Weeks
4	Virtualization	3 Weeks

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5	Cloud Computing	2 Weeks
6	Cloud Infrastructure	3 Weeks
7	Cloud Security	2 Weeks
8	Project	6 Weeks
Total Duration		24 Weeks

Course Contents

1. **Introduction to Network Management**
- 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

2. **Introduction to Windows & Linux Server**
- 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

3. **Advanced Linux Server**
- Configuring DNS Server
- Configuring Web Server with Virtual Hosting
- Configuring MySQL Server
- Configuring Mail Server
- Configuring File Servers

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4. **Virtualization**

- Configuring Virtual Box
- Configuring VMware
- Configuring KVM Server
- Configuring Xen
- Configuring Hyper-V
- Deploying Vagrant
- Setting Linux Container
- Configuring Open Storage
- Configuring Open vSwitch

5. **Cloud Computing with SaaS & PaaS Cloud**

- Introduction to Cloud Computing
- Types of Cloud Services
- Introduction to SaaS Cloud
- SaaS Cloud Deployment with Open Source Tools
- Introduction to PaaS Cloud
- PaaS Cloud Deployment

6. **Cloud Infrastructure using OpenStack, XenServer & vSphere**

- Introduction to IaaS Cloud
- Types of Cloud Deployment with Xen/KVM
- Setting Private Cloud with XenServer and XVP
- Setting Private Cloud with vSphere
- Deployment with Public Cloud AWS

7. **Cloud Security**

- Access Control Types
- Cryptography and Algorithm Analysis
- Cloud Monitoring
- Cloud Auditing
- Cloud Automation
- Cloud Security Best Practices
- Cloud Standards

8. **Project**

Course Fees

Course fee is Rs. 41,160/- + GST as applicable. (Can be paid as a single instalment of Rs.48,570/- (Including Reg. fee) or in 2 instalments as given below)

Registration Fee	Rs. 1000/- for SC-ST Adjustable against advance security deposit.	Rs. 1000/- for others Adjustable with Training Fee	
Instalment No.	*SC-ST Candidates (Fee including GST in Rs.)	General Candidates (Fee including GST in Rs.)	Last Date
1	*	23,785.00	24-08-2021
2	*	23,785.00	27-10-2021
Total	---	47,570.00	

* Tuition Fees are waived for eligible SC/ST students who are successfully completing the course with NSQF certification under SCSP/TSP scheme. Admission process for SC/ST candidates for non-formal courses is being worked out. Once finalized, same will be intimated to all SC/ST candidates. Further, Caution/Security deposit amount for SC/ST candidates will be intimated to all selected candidates separately.

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 while directly applying for registration and NSQF Examination.

1. *NSQF Examination fee of Rs. 2600/- while registering for Examination*

Important Note: This course is submitted for NSQF validity extension.

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.

Eligibility

✓ BE / BTech, BCA, BSc (IT / Computer Science / Electronics) or equivalent of any of these.

Number of Seats: 60 (Sixty) - Total

Category	No. of Seats
SC (15%)	08
ST (7.5%)	04
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 August 2021

Registration Procedure

All interested candidates are required to fill the Registration form online with registration fee before 18th August 2021 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 19-08-2021 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.

✓ For SC/ST:

  • Original copies of Proof of Age, Qualifying Degree (Consolidated Mark sheet

& Degree Certificate/Course Completion Certificate), 10th and 12th mark sheets.

- Self-attested copy of community certificate.
- One passport size photograph.
- AADHAR Identity proof must for SC/ST Candidates (For availing concession).

✓ For Others:

- Original copies of Proof of Age, Qualifying Degree (Consolidated Mark sheet & Degree Certificate/Course Completion Certificate), 10th and 12th mark sheets.

- Self-attested copy of community certificate.
- One passport size photograph.

✓ After document verification selected candidates have to pay first instalment of Rs. *23,785/-* on or before 24-08-2021 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 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 Institute 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: Coordinator, Mobile: 9443349257**

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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: 18-08-2021**
- **Display of Provisional Selection List: 19-08-2021**
- **Payment of first instalment fee: 20-08-2021 to 24-08-2021**
- **Course Start Date: 25-08-2021**

Examination & Certification

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

Examination

Examination scheme for each module 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 Min)	Marks /Paper			No. Of Projects	Marks	
3	100	2	180	90	60	60	1	100	700

Module Name	Means of Assessment			
	Total Marks	Written	Practical	Assignments/Projects
Introduction to Network Management	50	25	20	5
Introduction to Windows & Linux Server	50	25	20	5
Advance Linux Server	50	25	20	5
Virtualization	50	25	20	5
Cloud Computing	50	25	20	5
Cloud Infrastructure	50	25	20	5
Cloud Security	100	50	40	10
Mini Project	200	-	175	25
Total	600	200	335	65

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.