Course Prospectus

"Certified Cloud Computing Engineer"
(NSQF - Level 5)

Mode: ONLINE (Blended)

Certified Cloud Computing Engineer

राष्ट्रीय इलेक्ट्रॉनिकी एवं सूचना प्रौद्योगिकी संस्थान, चेन्नई
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Course Prospectus

Name of the Group: Cloud Computing

Course Name: "Certified Cloud Computing Engineer"

Course Code: IS 900

NSDA CODE: 2021/ITES/NIELIT/04735

NSQF LEVEL: 05

Duration: 840 Hours, 6 Months

Last Date of Registration: 31-08-2022

Display of Provisional Selection List: 01-09-2022

Payment of first instalment fee: 01-09-2022 to 06-09-2022

**Course Start Date:** 07-09-2022

Preamble:

Collaborative Cloud Workspace brings people together to access a dedicated or shared environment of a resource pool. Currently Business model depends on the Cloud Infrastructure and Networking used within any business activity involving production and distribution of services. Productivity tools are also associated for workflow and services included for access management and services combined together can be rapidly provisioned or released with minimal management effort based on the characteristics and service models of Cloud Computing. Even with the establishment of intended services made to be utilized for delivering cloud services, there is a highly increased hazard of any attack through any known or unknown vulnerability that may be intended to bring down the infrastructure and the network. Hence there is a need to protect these sensitive data from exploitation by using best approaches for practicing Cloud Security

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
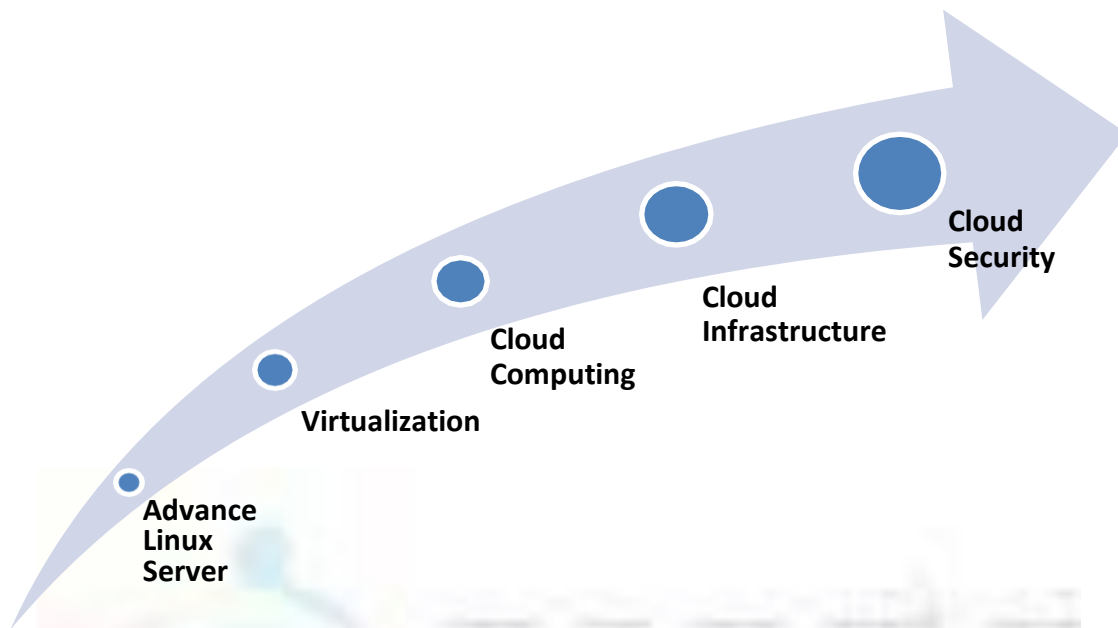
Course Structure

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

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Course Fees

Registration Fee- Rs.1000/- (Refundable for SC/ST*)

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

Registration Fee	Rs. 1000/- for SC-ST (Refundable)	Rs. 1000/- for General Candidates Adjustable against training fee	
Installment No	*SC-ST Candidates (Fee including GST in Rs.)	General Candidates (Fee including GST in Rs.)	Last Date
1	*	20,500.00	06-09-2022
2	*	20,500.00	30-12-2022
Total	---	42,000.00	

*Caution deposit (Rs. 1000/-) will be refunded for eligible SC/ST candidates who will be successfully completing the course with NSQF certification under SCSP/TSP scheme.

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

*Apart from Course fee Rs. 590/- (inclusive of GST) is to be paid as Project fee during the NSQF Exam Registration (for General Candidates only).

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 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 or Diploma (IT /Computer Science /Electronics) with Experience of 2 Years in Cloud Domain.

Number of Seats: 60 (Sixty) - Total

Category	No. of Seats
SC (15%)	08
ST (7.5%)	04
OTHERS	48
Total	**60**

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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 concernedor by the depositor while remitting the amount into our account*

Last date of Registration: 31st August 2022

Registration Procedure

All interested candidates are required to fill the Registration form online with registration fee before 31st August 2022 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 Chennaiwebsite (www.nielit.gov.in/chennai) on 01-09-2022 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 there document on registration portal foronline 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).
  - 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:**
  - 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. 20,500/- on or before 06-09-2022 by payment mode mentioned above. Selected candidates are requested to upload the proof of remittance of fee on registration

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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/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: Placement assistance is provided to students who qualify our courses.

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: 31-08-2022**
- ➢ **Display of Provisional Selection List: 01-09-2022**
- ➢ **Payment of first instalment fee: 01-09-2022 to 06-09-2022**
- ➢ **Course Start Date: 07-09-2022**

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> **Payment of second instalment fee: 27-12-2022 to 30-12-2022**

Examination & Certification

✓ Certification Body: Examination Section, NIELIT HQ

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

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 Min)	Marks /Paper			No. Of Projects	Marks	
3	100	2	180	90	60	60	1	100	700

Theory Papers

- o **Theory 1 – Network and System Administration**
- o **Theory 2 – Virtualization**
- o **Theory 3 – Cloud Computing and Security**

Practical Papers

- o **Practical 1 – Advanced Linux Server**
- o **Practical 2 – Cloud Infrastructure**

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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 obtainedin all modules.

Faculty

Dr. Munivel E	Mr. Yatish Kumar P
MTECH (CSE), PhD (CSE)	BE (CSE), PGDCC
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munivel@nielit.gov.in	yatishkumar@nielitchennai.edu.in

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Detailed Syllabus

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

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

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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
- Configuring Secure DNS Server
- Configuring Secure Web Server
- Configuring Secure Mail Server
- Configuring Secure File Server
- Cloud Monitoring
- Cloud Auditing
- Cloud Automation
- Cloud Security Best Practices
- Cloud Standards

8. Project

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