# NIELIT, CHENNAI
## ISTE COMPLEX, 25, GANDHI MANDAPAM ROAD, CHENNAI
## Course Prospectus

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**Name of the Group:** IT

**Course Name**: Advance Course in Web Application Development using LAMP

**NSQF Level:**  7

**Course Code:** IT 200

**Start Date:** 24-09-2018

**Duration:** 240 Hours**,** 24 Weeks (2 Hours per day)

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## Preamble

Today in every field Open Source Technology is used.  Due to robustness and security features of Linux Operating System, Linux becomes a demanding Operating Site for Web Application Development. Open Source software's are freely available thus seeing the economic feasibility the LAMP platform is widely used for Web Application Development.

## Objective:

The Course is NSQF aligned (Level 7). After completion of this course, students can go for course that provide specialized course of web administration and server security. Further they can opt for database administration and web content management using open source techniques. Many companies are providing initial breakthrough to freshers to join as a trainee intern. The trainee / interns could use experience gained while working in company as a platform to enhance their technical skills and achieve better jobs.

During the initial stages of career candidate might work as a trainee / intern whose role would be to design the web site and assist web administrator in different types of daily activities. He/she can assist in development of a live project.  Further candidate could communicate with the clients directly and can discuss/resolve various issues in web development and web administration.
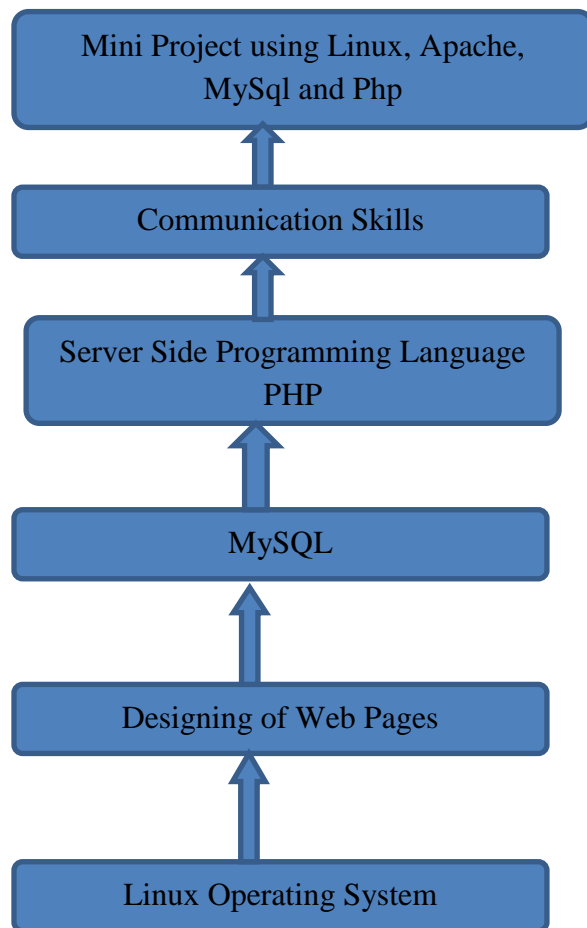
**Outcome of the Course**:
After successful completion of this module, students should be able to:

1.  Work on Linux operating System.
2.  Designing of Web Pages
3.  Configure and implement security features on Apache.
4.  Design a Database in MySQL
5.  Perform MySQL Administration
6.  Work in programming language PHP
7.  Enhance Communication Skills
8.  Develop a live project using open source technology

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**Full Flow of Course**

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        ┌─────────────────────────────────┐
        │ Mini Project using Linux, Apache,│
        │        MySql and Php             │
        └─────────────────────────────────┘
                        ▲
        ┌─────────────────────────────────┐
        │      Communication Skills        │
        └─────────────────────────────────┘
                        ▲
        ┌─────────────────────────────────┐
        │ Server Side Programming Language │
        │              PHP                 │
        └─────────────────────────────────┘
                        ▲
        ┌─────────────────────────────────┐
        │             MySQL                │
        └─────────────────────────────────┘
                        ▲
        ┌─────────────────────────────────┐
        │      Designing of Web Pages      │
        └─────────────────────────────────┘
                        ▲
        ┌─────────────────────────────────┐
        │      Linux Operating System      │
        └─────────────────────────────────┘
```

**Course Structure:**

| Sl. No. | Topics | Duration |
|---------|--------|----------|
| IT 201 | Linux operating System | 50 Hrs |
| IT 202 | Apache Configuration | 20 Hrs |
| IT 203 | Designing of Web pages | 40 Hrs |
| IT 204 | MySQL | 30 Hrs |
| IT 205 | Php | 60 Hrs |
| IT 206 | Communication Skill | 10 Hrs |
| IT 207 | Mini project | 30 Hrs |

**Other Contents:**

**Course Fees**

**For General Candidates:** Course fee is **Rs. 17,700/-(Including GST)**

**For SC/ST Candidates**

Tuition Fees are waived for all eligible SC/ST students. However they are required to remit an amount of **Rs.2, 000/-** as advance caution/security deposit. This amount will be considered as caution/security deposit and will be refunded after completion of the course. If the student fails to complete the course successfully this amount along with any other caution/security deposits will be forfeited.

**Registration Fee:** (Non-refundable)

SC/ST: No registration fee

Others: **Rs.500/-.**

However the above registration fee shall be refunded on few special cases as given below

- ✓ Course postponed and new date is not convenient for the student.
- ✓ Course cancelled.

Course Fee Installment Structure: Not applicable for this course

**Eligibility:** B.E/B.Tech/MCA/BCA/NIELIT A Level Completed or Ongoing

**Number of Seats: 25**

**How to apply:**

Candidates are advised to download the Registration from our website www.nielit.gov.in/chennai. After filling the form with all documents and fees, it can be submitted to NIELIT Chennai office in person or through post before staring of the course. Payment towards non-refundable Registration and Course fee can be paid through any one of the following modes:

- ✓ DD drawn from a nationalized bank (preferably SBI) in favour of "NIELIT Chennai" payable at Chennai.
- ✓ Online transaction: Account No: 31185720641 Branch: Kottur (Chennai), IFS Code: SBIN0001669.
- ✓ Pay through Nationalized Bank Debit Card (Service charges applicable)

*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: 21st September, 2018**

**Selection of candidates:** First Come First Serve basis

**Admission Procedure:**

All interested candidates are required to fill the Registration form with the fees (Registration and Course fees) before 21st September, 2018 with all the necessary following documents.

- Original and self-attested Copies of Proof of Age, Qualifications, etc.
- One passport size photograph and one stamp size photograph for identity card.
- Self-attested copy of Govt. issued photo ID card (AADHAR Identity proof must for SC/ST Candidates).
- Self-attested copy of community certificate (if availing SC/ST fee concession)

*Note:* Working days are from Monday to Friday. Admission timings are from 9.30 am to 4.00 pm.

**Discontinuing the course:** No fees under any circumstances shall be refunded in case of a student discontinuing the course. No certificate shall be issued if discontinued.

**Course Timings**: 4:00 PM to 6:00 PM (Monday to Friday)

**Location and how to reach:** NIELIT Chennai is located at Gandhi Mandapam Raod, Kotturpuram, Chennai (Landmark: Opp. To Anna Centenary Library)



**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: Sanjeev Kumar Jha, Mobile: 7765803105

**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.

**Annexure: Detailed Curriculum**

1. **Name of Unit of Qualification**: Configure Linux Operating System to create a properly functioning Linux environment

**Duration**: 20 Hours

| Performance Criteria (OUTCOME No.) | Contents | Hrs. |
|---|---|---|
| **Outcome-1:** Preparation of Platform for Linux environment | Introduction of Linux Operating System, Basic Commands of Linux Operating System | 05 |
| **Outcome2:** Acquiring skills on working with vi editor | Working with vi editor | 05 |
| **Outcome3:** Acquiring skills on shell scripting | Basic concepts of shell script, conditional statement, shell functions | 10 |

2. **Name of Unit of Qualification**: Configure Programs and utilities to administer a Linux machine for web development

**Duration**: 20 Hours

| Performance Criteria (OUTCOME No.) | Contents | Hrs. |
|---|---|---|
| **Outcome-1:** Acquiring skills to install and configure web server | Introduction of Webserver, Introduction to Apache Tomcat and its configuration, Request response model, Web Container etc. | 10 |
| **Outcome2:** Acquiring skills to configure php and MySQL in Linux environment. | Installation of Php and MYSQL on Linux. Installation of MySQL Server and its configuration, Installation of workbench and its configuration. Php Configuration file. | 10 |

3. **Name of Unit of Qualification**: Configure Apache Web server for web administration
**Duration**: 15 Hours

| Performance Criteria (OUTCOME No.) | Contents | Hrs. |
|---|---|---|
| **Outcome-1:** Acquiring skill on configuring and administration of virtual host. | Virtual Hosts, Name Based Virtual Host, IP Based Virtual Host, Port Based Virtual Host, Access Control etc. | 05 |
| **Outcome2:** Acquiring skill on implementing web server authentication and security. | Basic Authentication,.htaccess, Apache Web Server Security, SSL Configuration, Server Signature, Apache Log Files, access/error log file for a specific website | 10 |

4. **Name of Unit of Qualification**: Analyze the need for security measures for a Linux Environment

**Duration**: 15 Hours

| Performance Criteria (OUTCOME No.) | Contents | Hrs. |
|---|---|---|
| **Outcome-1:** Acquiring skills on file system security. | File System and its architecture, File and Directory Permissions, Disk encryption technique Special Modes, ACL, User Management etc. | 05 |
| **Outcome-2:** Acquiring skills on network security. | Firewall fundamental and its configuration, TCP Wrapper, Secure shell and secure FTP, configuring ftp server etc. | 10 |

5. **Name of Unit of Qualification**: Designing of Web pages

**Duration**: 15 Hours

| Performance Criteria (OUTCOME No.) | Contents | Hrs. |
|---|---|---|
| **Outcome-1:** Acquiring the skills to design a web page | Introduction to HTML, HTML fonts Styles, Links, Images, Tables, Static V/S Dynamic Websites, HTML, attributes, Headings, Paragraphs, Formatting, Lists, Colours, Forms etc. | 05 |
| **Outcome-2:** Acquiring the skills to create and implement CSS | CSS Introduction, CSS Id & Class, Styling Backgrounds Fonts, Links, CSS Border, HTML5 | 10 |

6. **Name of Unit of Qualification**: Implementation of Audio, Video, Animations and other plugin in web pages

**Duration**: 15 Hours

| Performance Criteria (OUTCOME No.) | Contents | Hrs. |
|---|---|---|
| **Outcome-1:** Acquiring skills to implement audio, video files and other plugins | Implementation of Video, Audio and other Plug-ins. | 05 |
| **Outcome-2:** Acquiring skills to implement animation in web designing | CSS3 2D Transforms CSS3 3D Transforms CSS3 Transitions CSS3 Animations etc. | 10 |

7. **Name of Unit of Qualification**: Implementation of Client Side Validations using various techniques

**Duration**: 10 Hours

| Performance Criteria (OUTCOME No.) | Contents | Hrs. |
|---|---|---|
| **Outcome-1:** Applying Client side validations using Java Script and AJAX | Java Script Introduction, Java Script client Validations, Java Script events, Images and Forms Ajax Integration, AJAX features and its implementation, XML HTTP Request, XHR Object XHR Response XHR Ready State, Fetching text from source, AJAX PHP | 05 |
| **Outcome-2:** Applying Client side validations using JQuery | JQUERY Introduction, JQUERY library, using JQUERY with Php | 05 |

8. **Name of Unit of Qualification**: Database Design

**Duration**: 10 Hours

| Performance Criteria (OUTCOME No.) | Contents | Hrs. |
|---|---|---|
| **Outcome-1:** Acquiring skills to Describe define and apply the major components of the relational database model to database design. | RDBMS concept, relational database model, normalization, introduction of MySQL | 03 |
| **Outcome-2:** Acquiring skills to apply the Structured Query Language (SQL) for database definition and manipulation. | Create tables, fields Alter table Insert, Update and where condition Delete, Select Limits, Distinct Joins, Order by Group by, Union Import and Export Database | 03 |
| **Outcome-3:** Acquiring skills to utilize a database modeling technique. | | 02 |
| **Outcome-4:** Acquiring skills to apply ethical computing concepts and practices to database design and implementation. | Store procedure and MySQL Functions | 02 |

9. **Name of Unit of Qualification**: Database Administration

**Duration**: 20 Hours

| Performance Criteria (OUTCOME No.) | Contents | Hrs. |
|---|---|---|
| **Outcome-1:** Acquiring skills to understand the responsibilities of a database administrator. | Roles and responsibilities of database administrator. | 02 |
| **Outcome-2:** Monitoring and Analysis of various parts of database | MySQL Overview and Architecture, MySQL memory structures, MySQL background processes. | 02 |
| **Outcome-3:** Acquiring skills to database user management | Creating Users, changing password, Granting and revoking privileges. | 02 |
| **Outcome-4:** Acquiring skills to use Object Explorer or Transact-SQL for database administration. | Control and Redo Log Files: Managing the control files, Maintaining and monitoring redo log files. | 02 |
| **Outcome-5:** Acquiring skills to taking regular backups and restoring databases. | Taking user backup, Backup requirement, Physical and logical backup, Cold and hot backup, Enabling and disabling binary logging, Understanding the binary log architecture, Different backup techniques in MySQL (MySQL dump, Full back up, Transactional backup, Percona Xtrabackup), Restoring mysql backup, Purging old logs, MySQL Binlog utility and PITR. | 06 |
| **Outcome-6:** Analyze and discuss the issues related to tuning a database to enhance performance. | Trouble shooting and Performance Tuning/Optimization for large dB's, General Problems and their resolution, Connection problems, and understanding the error log, Performance tuning – Index suggestions, Optimizing the MySQL database. | 06 |

10. **Name of Unit of Qualification**: Implementation of a server side programming language PHP

**Duration**: 60 Hours

| Performance Criteria (OUTCOME No.) | Contents | Hrs. |
|---|---|---|
| **Outcome-1:** <br> Acquiring skills on programming concepts <br><br> **Outcome-2:** <br> Acquiring skills on architecture of front-end application | Programming Concepts, Architecture of web application, Introduction of Php | 04 |
| **Outcome-3:** <br> Acquiring skills on implementation of basic concepts in php programming. | Php Data Types and basics, Loops, String and other functions in PHP, Super global, Arrays in PHP with Attributes, PHP Functions, PHP Email Function etc. | 20 |
| **Outcome-4:** <br> Acquiring skills on implementation of object oriented concepts in Php. | Object Oriented Concepts, Classes, use of include function etc. Defining a class and its usage. | 15 |
| **Outcome-5:** <br> Acquiring skills to understand the paradigm for dealing with form based data | Php Forms and frames, creating user forms | 05 |
| **Outcome-6:** <br><br> Acquiring Skills on file handling | File handling in Php, uploading files and images, using file system in php | 06 |
| **Outcome-7:** <br><br> Attaining skills on integrating application with back end database | Database connectivity, using MySQL functions in php | 06 |
| **Outcome-8:** Attaining skills on server side validations | Server side validations | 02 |
| **Outcome-9:** Attaining skills on implementation of security features. | Session and cookies, using security features etc. | 02 |

11. **Name of Unit of Qualification**:  Enhancing Communication Skill

 **Duration**: 10 Hours

| Performance Criteria (OUTCOME No.) | Contents | Hrs. |
|---|---|---|
| **Outcome1:** Acquiring Communication Skill | Communication, verbal and nonverbal communication | 02 |
| **Outcome2:** Acquiring skills to prepare CV | **Curriculum Vitae**: Overview, types of CV, Covering Letter etc. | 02 |
| **Outcome2**: Preparing for Interview | Building professional relationship, Managing Business relationships **Interview Techniques:** Preparing for an interview, Interview Formats, Types of Interview Questions **Interview Preparation:** Mock Interviews, the benefits of mock interviews. | 06 |

12. **Name of Unit of Qualification**:  Development of live project using open source technology

 **Duration**: 30 Hours

| Performance Criteria (OUTCOME No.) | Contents | Hrs. |
|---|---|---|
| **Outcome1:** Identify Module Requirement | Module Identification and System Study | 06 |
| **Outcome2**: Development of Module | Database Design and Module Development | 22 |
| **Outcome3:** Implementation of the Module. | Project Demonstration | 02 |