#### **NSDA REFERENCE**

To be added by NSDA

## **QUALIFICATION FILE TEMPLATE**

### QUALIFICATION FILE - CONTACT DETAILS OF SUBMITTING BODY

Name and address of submitting body:

NIELIT Patna,

11th Floor, Biscomaun Tower, Gandhi Maidan, Patna, pin-800001.

Name and contact details of individual dealing with the submission

Name Shri Alok Tripathi

Position in the organisation Director-i/C

Address if different from above NA

**Tel number(s)** 0612-2219134

E-mail address dir-patna@nielit.gov.in

## List of documents submitted in support of the Qualifications File

- 1. Industry Validation (Annexure I)
- 2. Detailed Curriculum (Annexure II)

## **SUMMARY**

<b>Qualification Title:</b>	Advance Course in Web Application Development using LAMP.
<b>Qualification Code</b>	NIELIT/WD/3/46
Nature and purpose of the qualification:	Nature:
Body /bodies which will	Examination Cell,
award the qualification:	National Institute of Electronics and Information Technology 6-CGO Complex, Electronics Niketan Lodhi Road, New Delhi. 110003.
Body which will accredit providers to offer courses leading to the qualification:	National Institute of Electronics and Information Technology 6-CGO Complex, Electronics Niketan Lodhi Road, New Delhi. 110003.
Body /bodies which will Be responsible for assessment:	National Institute of Electronics and Information Technology 6-CGO Complex, Electronics Niketan Lodhi Road, New Delhi. 110003.
	Presently, Accreditation is not prescribed; affiliation is one of the models.
Occupation(s) to which the qualification gives access:	WebDeveloper, Web Administrator, Technical Consultant.
<b>Licensing Requirements</b>	N/A
Proposed level of the qualification in the NSQF	Level-7
Anticipated volume of training/learning required to complete the qualification	240 Hours
Entry requirements/ Recommendations	B.E./B.Tech/NIELIT A Level/BCA or Its equivalent.
Progression from the Qualification	Web Developer/Web Administrator/Technical Consultant-Next Job Role-Next Job Role  1) In Academic  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.
	2) <u>Professional</u>
	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.
Planned arrangements for RPL.	<ul> <li>Presently only candidates who undergo training shall be assessed.</li> <li>Later on, candidate can appear for certification examination directly if they fulfil entry requirements.</li> </ul>
International Compatibility where Known.	NA
Date of Planned review of the Qualification	After Every 2 Years

Format Structure of the Qualification			
Title of Component and Identification Code	Mandatory/ Optional	Estimated Size (Learning hours)	Level
Configure and Practice Linux Operating System to create a properly functioning Linux environment.	M	20	6
Programs and utilities to administer a Linux machine for web development.	M	20	6
Configure Apache Web server for web administration	M	15	6
Analyze the need for security measures for a Linux environment.	M	15	6
Designing of Web Pages	M	15	5
Implementation of Audio, Video, Animations and other plugins in web pages.	M	15	6
Implementation of Client Side Validations using various techniques	M	10	6
Database Design	M	10	7
Database Administration	M	20	7
Implementation of a server side programming language PHP	M	60	6
Enhancing Communication Skills	M	10	6
Development of a live project using open source technology	M	30	7

Please attach any document giving further detail about the structure of the qualification-e.g. a Curriculum or Qualification Pack.

Detail Curriculum attached at Annexure II.

### **SECTION -1**

#### **ASSESSMENT**

### Name of Assessment body:

### **Examination Cell,**

National Institute of Electronics and Information Technology 6-CGO Complex, Electronics Niketan Lodhi Road, New Delhi. 110003.

### Name of body checking or verifying Assessments:

#### **Examination Cell**,

National Institute of Electronics and Information Technology 6-CGO Complex, Electronics Niketan Lodhi Road, New Delhi. 110003.

No accreditation norms for providers and assessment bodies required.

### Name of Qualification Awarding body:

National Institute of Electronics and Information Technology.

### Will the assessment body be responsible for the RPL assessment?

Give details of how RPL assessment for the qualification will be carried out and quality assured.

Presently only candidates who undergo training shall be assessed. Later on, candidate can appear for certification examination directly if they fulfil entry requirements.

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, consistent and fair and show that these are in line with the requirements of NSQF:

The emphasis is on practical demonstration of skills & knowledge based on the performance criteria. Student is required to pass in all OUTCOMEs individually and marks are allotted. Following assessment methodologies are used.

The Following assessment methodologies are used.

- A. Written Assessment (Multiple Choice Questions)
- B. Practical Assessment & class Performance
- C. Project

The assessment results are backed by following evidences.

- 1. The assessor collects a copy of the attendance for the training done under the scheme. The attendance sheets are signed and stamped by the In-charge / Head of the Training Centre.
- 2. The assessor verifies the authenticity of the candidate by checking the photo ID card issued by the institute as well as any one Photo ID card issued by the Central/Government. The same is mentioned in the attendance sheet.

- 3. The assessor assigns roll number.
- 4. The assessor takes photograph of all the students along with the assessor standing in the middle and with the centre name/banner at the back as evidence.

Please attach any documents giving further information about assessment and /or RPL.

#### ASSESSMENT EVIDENCE

In this section, you are asked to show how the assessment tools you will use will cover all the outcomes and criteria in the qualification.

Complete a grid for each component as listed in "Formal structure of the qualification" in the summary.

NOTE: this grid can be replaced by any part of the qualification documentation which shows the same information –i.e. Learning Outcomes to be assessed, assessment criteria and the means of assessment.

Job Role Web Developer, Web Administrator, Technical Consultant

## Title of Unit/Component:

(Detailed Curriculum attached as Annexure-III)

		Means of Assessment			
Outcomes to be assessed	Assessment Criteria for the outcome	Total Marks	Written	Practical	Project
Configure and Practice Linux Operating System to create a properly			05	05	NA
functioning Linux environment.	Apply Procedure to working with vi editor		05	05	NA
	Apply Procedure to working with shell scripting		10	10	NA
	Total Marks	40	20	20	NA
administer a Linux machine for web	Learn how to install and configure web server		10	10	NA
development.	Learn how to configure php and		10	10	NA

	MySQL in Linux environment.				
	Total Marks	40	20	20	NA
	Use Concepts of configuring and administration of virtual host.		08	07	NA
	Implementation web server authentication and security.		08	07	NA
	Total Marks	30	16	14	NA
Analyze the need for security measures for a Linux Environment	Apply concepts on file system security.		08	07	NA
	Execute the skills on network security.		08	07	NA
	Total Marks	30	16	14	NA
Designing of Web Pages	Execute the procedure to design a web page		08	07	NA
	Apply the skills to create and implement CSS		08	07	NA
	Total Marks	30	16	14	NA
	Implement audio, video files and other plugins.		08	07	NA
	Learn how to implement animation in web designing.		08	07	NA
	Total Marks	30	16	14	NA
-	Applying Client side validations using Java Script and AJAX		05	05	NA
	Applying Client side validations using JQuery		05	05	NA

	Total Marks	20	10	10	NA
Design of Database	Describe, define and apply the major components of the relational database model to database design.		04	02	NA
	Apply the Structured Query Language (SQL) for database definition and manipulation.		02	04	NA
	Utilize a database modelling technique.		02	02	NA
	Apply ethical computing concepts and practices to database design and implementation.		02	02	
	Total Marks	20	10	10	NA
Explain and practice of Database Administration	Responsibilities of a database administrator.		02	04	NA
	Monitoring and analysis of various parts of a database.		04	04	NA
	Learn Concepts of database user management		04	04	NA
	Know how to use Object Explorer or Transact-SQL for database administration.		04	04	NA
	Know how to take regular backups and restoring databases.		02	02	NA
	Analyse and discuss the issues related to tuning a database to enhance performance.		04	02	NA
	Total Marks	40	20	20	NA
Implementation of a server side programming language PHP	Apply the programming concepts skills	125	02	00	NA
	Learn the use of architecture of		04	00	NA

	front-end application.				
	Implementation of basic concepts in Php programming		04	04	NA
	implementation of object oriented concepts in Php.		11	10	NA
	Explain how to paradigm for dealing with form-based data.		05	10	NA
	Learn the procedure for file handling.	-	04	04	NA
	Integrating application with backend database.		11	10	NA
	Skills on server side validations.  Implementation of security features.	10	10	10	NA
			10	16	NA
	Total Marks		61	64	NA
Enhancing Communication Skills	Acquiring Communication Skill.		04	04	NA
	Acquiring Skills to prepare CV		04	04	
	Preparation for Interview.		02	02	NA
	Total Marks	20	10	10	NA
Development of live project using open source	Identify Module Requirements.		NA	NA	15
technology	Development of Module.		NA	NA	50
	Implementation of the Module.		NA	NA	10

Total Marks	75	NA	NA	75
Grand Total	500	215	210	75

## **Means of Assessment:**

Proctored online assessments (LAN and Web based), carried out using a variety of question formats applicable for the course.

## Pass/Fail

Following Grading Scheme (on the basis of total marks) will be followed:

Grade	S	A	В	C	D	Fail
Marks Range (in %)	85 to 100	75 to 84	65 to 74	55 to 64	50 to 54	Below 50

## **SECTION 2**

## **EVIDENCE OF LEVEL**

## **Level of Qualification: 5**

## **OPTION A**

Title/Name of Qualification/Component: Advance Course in Web Application Development using LAMP.

NSQF Domain	Outcomes of the Qualification/Component	How the Job role relates to the NSQF level descriptor	NSQF Level
Process	System to create a properly	In Learning Linux Operating System and its various functionalities candidate learn specialised technical skills to perform various server related tasks.	6
		They will also learn broad range of networking skills/activities and clarity of knowledge for configuration of Linux servers.	
Professional Knowledge		After acquiring Professional Knowledge on Configuration and proper working of Linux Operating System candidate will have sufficient knowledge of facts and principles adopted for configuration of servers.  They will acquire knowledge in field of Linux Operating system.	
Professional Skill		After acquiring Professional skill on Configuration of Linux Operating System candidate will have sufficient knowledge about cognitive and practical skills required to configure various servers.	6
Core Skill		After acquiring Core skill on Configuration of Linux Operating System candidate will learn mathematical calculations in (shell scripting) and learn logical	6

		communication skills.	
Responsibility		After acquiring knowledge on Configuration of Linux Operating System candidate will learn responsibility for own work and will learn how to help others in group.	
Process	utilities to administer a	administration of Linux Operating System candidate will learn specialised technical skills to perform various related tasks. The candidate will learn various servers and tools of Linux operating system for managing users.	
		They will also learn broad range of networking server skills/activities and clarity of knowledge for configuration of Networking file servers of Linux Operating System.	
Professional Knowledge		After acquiring Professional Knowledge on Configuration of Linux Operating System candidate will have sufficient knowledge of facts and principles regarding system administration of Linux operating related to web development.	
		They will acquire knowledge in field of server administration in Linux Operating system.	
Professional Skill		After acquiring Professional skill on Configuring programs and utilities to administer a Linux machine for web development candidate will have sufficient knowledge about cognitive and practical skills required to configure various servers.	

Core Skill	After acquiring Core skill on Configuration of programs and utilities to administer a Linux machine for web development candidate will learn mathematical skills for configuring crontab and other background processes executed by the Linux server internally. They will also learn skill of organising information to manage the server and improve their communication skills.	5
Responsibility	After acquiring knowledge on Configuration of programs and utilities to administer a Linux machine for web development candidate will learn responsibility for own work and will learn responsibility of others also.	6
Process	While learning configuration of Apache Webserver for web administration a huge impact is on concerning system security, which requires a wide range of specialized technical skills. The candidate will learn various server's tools for configuration of Apache Web Server.  They will also learn broad range of web server related skills/activities and clarity of knowledge for configuration web server.	6
Professional Knowledge	After acquiring professional knowledge on Configure Apache Webserver for web administration candidate will learn various factual and theoretical knowledge in broad context related to configuration of virtual host, private directories etc.  They will learn methods and techniques for web administration.	6

Professional Skill		After acquiring professional skills on Configure Apache Webserver for web administration candidate will learn various intellectual and practical skills related to current web server software and will be able to apply basic methods related to configuration of virtual host, private directories etc.	
Core Skill		After acquiring Core skill on Configure Apache Webserver for web administration candidate will learn mathematical skills in setting up servers. They will also learn skill of organising information to manage the server and improve their communication skills.  They will be able to express their thoughts clearly and briefly.	
		In setting up servers and software, candidate will learn some amount of scripting (writing small programs or commands).	
Responsibility		After acquiring knowledge on Configuration of Apache Webserver for web administration candidate will learn responsibility for own work and will learn some responsibility of others also.	
Process	Analyse the need for security measures for a Linux environment.	While learning security measures for a Linux environment a huge impact is on concerning system security, which requires a wide range of specialized technical skills. The candidate will learn various techniques for Security Enhanced Linux.  They will also learn broad range of web server related skills/activities and clarity of knowledge for configuration web server.	

Professional Knowledge		After acquiring professional knowledge on security measures for a Linux environment candidate will learn various factual and theoretical knowledge in broad context related to skills on additional security measures to the Linux operating system.  They will learn methods and techniques for implementing various security features.	6
Professional Skill		After acquiring Professional skill on security measures for a Linux environment candidate will have sufficient knowledge about cognitive and practical skills required to implement various security measures.	6
Core Skill		After acquiring Core skill on security measures for a Linux environment candidate will learn various security techniques that includes application of mathematical and logical skills.	6
Responsibility		After acquiring knowledge on security measures for a Linux environment candidate will learn responsibility for own work and will learn some responsibility of others also.	5
Process	Designing of Web Pages	In Learning Designing of Web Pages candidate carries out will developed technical skills for web site designing techniques.	5
		They will also learn strategy for selecting a procedure from various familiar procedures.	
Professional Knowledge		After acquiring Professional Knowledge about Designing of Web Pages candidate will have adequate knowledge regarding concepts of web	5

		designing and various principles.	
Professional Skill		After acquiring Professional skill on Designing of Web Pages candidate will be familiar with demonstration of practical skills and various tools.	
Core Skill		After acquiring Core skill on Designing of Web Pages candidate will learn about skills of collecting and organizing information in good manner.	
Responsibility		After acquiring knowledge on Web Designing candidate will learn responsibility for own work and will learn how to complete work of others in group in his absence.	
Process	Implementation of Audio, Video, Animations and other plugins in web pages.	After acquiring skills on Implementation of Audio, Video, Animations and other plugins in web pages' candidate carries out wide range of specialized skills.  They will also learn various methods for implementation of multimedia techniques.	
Professional Knowledge		After acquiring professional knowledge on Implementation of Audio, Video, Animations and other plugins in web pages candidate will learn various factual and theoretical knowledge in broad context related to various multimedia skills.  They will learn methods and techniques for implementing various plugin features.	
Professional Skill		After acquiring Professional skill on Implementation of Audio, Video, Animations and other plugins in web pages' candidate will have sufficient knowledge about cognitive and practical skills required to	

		implement various multimedia plugins.	
Core Skill		After acquiring Core skill in Implementation of Audio, Video, Animations and other plugins in web pages' candidate will learn various techniques that includes application of related logical skills.	6
Responsibility		After acquiring knowledge on Implementation of Audio, Video, Animations and other plugins in web pages candidate will learn responsibility for own work and will learn responsibility of others also.	6
Process	Implementation of Client Side Validations using various techniques	After acquiring skills on implementation of client side validations candidate carries out wide range of specialized skills.  They will also learn various methods for implementation of client side validations using JQUERY, AJAX etc.	6
Professional Knowledge		After acquiring professional knowledge on implementation of client side validations candidate will learn various factual and theoretical knowledge in broad context related to various skills like JQUERY and AJAX.  They will learn methods and techniques for implementing various validation techniques.	6
Professional Skill		After acquiring Professional skill on implementation of client side validations candidate will have sufficient knowledge about cognitive and practical skills required to implement various client side validation techniques.	6

Core Skill		After acquiring Core skill in Implementation of client side validations candidate will learn various validation techniques.	6
Responsibility		After acquiring knowledge on Implementation of client side validations candidate will learn responsibility for own work and will learn responsibility of others also.	6
Process	Database Design	After acquiring knowledge of Database Design candidate will learn skills on wide range of specialised technical skill of designing of database. They will have knowledge of various techniques of normalization and other features.	
Professional Knowledge		After acquiring professional knowledge on database design candidate will learn various factual and theoretical knowledge in broad context related to various database techniques.  They will learn methods and techniques for implementing various database techniques.	6
Professional Skill		After acquiring Professional skill on implementation of database design candidate will have sufficient knowledge about cognitive and practical skills required to implement various designing technique	
Core Skill		After acquiring Core skill in database design, they will learn logical and mathematical skill. They will learn presentation technique of designing the database.	

Responsibility		After acquiring knowledge on Implementation of database design candidate will learn responsibility for own work and will learn responsibility of others also.	
Process	Database Administration	After acquiring knowledge of Database Administration candidate will learn skills on wide range of specialised technical skill of database administration. They will have knowledge of various techniques of administering database and performance tuning.	
Professional Knowledge		After acquiring professional knowledge on database administration candidate will learn various factual and theoretical knowledge in broad context related to various database administration techniques.  They will learn methods and techniques for implementing various database administration techniques.	
Professional Skill		After acquiring Professional skill on implementation of database administration candidate will have sufficient knowledge about cognitive and practical skills required to implement various database administration techniques.	6
Core Skill		After acquiring Core skill in database administration, they will learn logical and mathematical skill. They will learn presentation technique of administering the database.	
Responsibility		After acquiring knowledge on Implementation of database administration candidate will learn responsibility for own work and will learn responsibility of others also.	

Process	In Learning Implementation of a server side programming language PHP candidate carries out specialized technical skills for programming techniques. After completion of this Learning Outcome, they will have knowledge of wide range of programming techniques.  Candidate will be able to solve wide range of activities involving various standard and non-standard programming practices.	6
Professional Knowledge	After acquiring Professional Knowledge on Implementation of a server side programming language PHP candidate will have broad practical and factual knowledge about programming techniques.  They will acquire knowledge in latest techniques of programming in Php.	
Professional Skill	After acquiring Professional skill on Implementation of a server side programming language PHP candidate will have sufficient knowledge about cognitive and practical skills required to generate solutions to various problems in programming.	6
Core Skill	After acquiring Core skill on Implementation of a server side programming language PHP candidate will learn mathematical calculations, techniques to develop various algorithms.  After acquiring Core skill on Implementation of a server side programming language PHP candidate will learn the technique of data collection and representation. They will learn various logic development techniques.	

Responsibility		After acquiring knowledge on Implementation of database administration candidate will learn responsibility for own work and will learn responsibility of others also.	6
Process	Enhancing Communication Skills	After acquiring skills of Communication Skills candidate carries out wide range of specialized skills for enhancing their communication skills.  They will also learn various methods for improving their overall personality.	
Professional Knowledge		After acquiring professional knowledge on Communication skill candidate will learn various factual and theoretical knowledge in broad context related to various personality development skills.  They will learn methods and techniques for implementing various interview techniques.	6
Professional Skill		After acquiring Professional skill on implementation of client side validations candidate will have sufficient knowledge about cognitive and practical skills required to implement various client side validation techniques.	6
Core Skill		After acquiring Core skill in communication skills candidate will learn various techniques to improve their personality.	6
Responsibility		After acquiring knowledge in communication skill candidate will learn responsibility for working in team and their own role.	6

Process	Development of live project using open source technology.	After acquiring skills on web development candidate will learn specialised theoretical and practical skills for design of various modules of the project.	7
Professional Knowledge		After acquiring skills on web development candidate will learn various features and techniques available in Php and MySQL. They will learn AJAX and other client side validation techniques deals with various theoretical and factual knowledge.	7
Professional Skill		After acquiring Professional skill on web development candidate will have sufficient knowledge about cognitive and practical skills required to implement various web development techniques.	6
Core Skill		After acquiring skills of developing a live project using LAMP technology, candidate will develop good logical and mathematical skills. Candidate will learn better presentation skills.	7
Responsibility		After acquiring knowledge in live project development candidate will learn responsibility for working in team and their own role.	6

### **SECTION 3**

#### **EVIDENCE OF NEED**

## What evidence is there that the qualification is needed?

PHP developers are responsible for using their knowledge of coding and scripting languages to write concise, clean and well-documented code for websites, software or web applications.

Working in PHP development requires very strong math, logic, and analytical skills. Strong interpersonal and teamwork skills are also important, because PHP development work often takes place in a team environment.

As of January 2013, PHP was used in more than 240 million websites (39% of those sampled) and was installed on 2.1 million web servers

The employment outlook for computer software engineering, which includes PHP development, is excellent; the U.S. Bureau of Labour Statistics (BLS) projects employment of software developers will grow by 17% from 2014-2024. Information from payscale.com shows that PHP developers earned a median salary of \$59,898 as of January 2016,

In addition to writing code, PHP developers may also design website wireframes and layouts, work with online databases, test websites for technical problems and provide advice to a team of web designers and developer so to learn LAMP qualification is needed.

Source:

https://w3techs.com/technologies/

https://bls.gov

http://study.com/articles/PHP\_Developer\_Job\_Info\_and\_Requirements\_for\_a\_Career\_as\_a\_P HP Developer.html

## What is estimated uptake of this qualification and what is the basis of this estimate?

As it is the new course, estimated uptake of this qualification will vary as per demand in Industry. Perhaps, estimated uptake on the basis of current scenario is 150 to 200 per year. Basis of this estimate is 30% of current average count of enrolments in Php Course in all NIELIT Centres.

What steps were taken to ensure the qualification (s) does/do not duplicate already existing or planned qualification in the NSOF?

The Qualification does not exist as per information available in public domain.

What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or update?

The Qualification is to be monitored and reviewed every two years. The following data will be used

- \* Results of assessments
- \* Employer feedback regarding student skill after conducting a placement drive
- Employer feedback will be sought post-placement
- Student feedbacks
- \* Workshops and seminar for reviewing the qualifications
- Consultation/ Tie-up with Industries or Expert for review of the Curriculum so as to meet the changing pace of technology and Industry requirements.

Please attach any documents giving further information about any of the topics above.: NIL

#### **SECTION 4**

#### **EVIDENCE OF PROGRESSION**

What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in the sector?

This qualification comprises both technical and analytical skills and can be linked to any qualification higher than this one, existing or to come.

Opportunity for Php Developer to venture into more specialized course in web security or to start their own business.

After successful completion of this course a candidate can choose for either specialized course in web security or they can start their own business for web based solutions. In addition to this as per industry requirement they may be hired as a Php developer.

Please attach any documents giving further information about any of the topics above: NA

## **SECTION 5**

#### EVIDENCE OF INTERNATIONAL COMPARABILITY

#### List any Comparisons which have been established

### 1. Website Development using Php and MySQL.

Martin School of Web design Sydney is a leading institute providing Diploma in Website Development using Php and MySQL.

(Source: http://www.martin.edu.au)

## 2. Zend Certified Engineer

Zend PHP Certification is an industry-wide standard that recognizes PHP expertise and is a measure of distinction that employers use to evaluate prospective employees.

(Source: http://www.zend.com/en/services/certification/php-5-certification)