

QUALIFICATION FILE**CONTACT DETAILS OF THE AWARDING BODY FOR THE QUALIFICATION****Name and address of awarding body:**

National Institute Of Electronics and Information Technology (NIELIT)
Electronics Niketen, 6 CGO Complex,
Lodi Road, New Delhi 110003, India

Name and contact details of individual dealing with the submission

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List of documents submitted in support of the Qualifications File

1. Talent Demand Supply Analysis Report
2. Occupational Analysis report for ITS
3. Occupational Map (ITS)
4. Industry Validation(Attached at Annexure I)
5. Placement Details(Attached at Annexure II)
6. Detailed Curriculum (Attached at Annexure III)

QUALIFICATION FILE

SUMMARY

Qualification Title:	Assembly & Maintenance of Personal Computer
Qualification Code	NL/S/L2/C010 NIELIT/HW/4/90
Nature and purpose of the qualification	This course will enable the students to understand the fundamentals of Computer and enabling them to assemble, troubleshoot and installation of hardware, software & peripherals devices of Computer.
Body/bodies which will award the qualification:	Examination Cell, National Institute of Electronics and Information Technology, 6-CGO Complex, Electronics Niketan, Lodhi Road, New Delhi.
Body which will accredit providers to offer courses leading to the qualification:	Examination Cell, National Institute of Electronics and Information Technology, 6-CGO Complex, Electronics Niketan, Lodhi Road, New Delhi.
Body/bodies which will be responsible for assessment:	Examination Cell, National Institute of Electronics and Information Technology, 6-CGO Complex, Electronics Niketan, Lodhi Road, New Delhi.
Occupation(s) to which the qualification gives access	Computer Technician, Technical support (Desktop)
Proposed level of the qualification in the NSQF.	3
Anticipated volume of training/learning required to complete the qualification:	240 hours
Entry requirements / recommendations.	10 th /12 th /ITI/Polytechnic Diploma /Graduation
Progression from the qualification.	<p>Academic progression:</p> <p style="text-align: center;">Assembly & Maintenance of PCs NL/S/L2/C010 (Level 3)</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Diploma in Computer Hardware Maintenance (CHM - O Level) course (Level 4)</p> <p style="text-align: center;">↓ ↓</p> <p style="text-align: center;">Advance Diploma in Hardware, Advanced Diploma in Computer Networking & Information Security Hardware Maintenance & [ADHNS] (Level 5) Networking (CHM – A) (Level 5)</p> <p>After completion of this course, students who has completed 12th standard can go forDiploma in Computer Application and Network Administration and can also undergo advanced networking qualification "Networking Specialist (NS)</p> <p>Professional progression:</p> <p style="text-align: center;">Junior Technician</p> <p style="text-align: center;">↓</p> <p style="text-align: center;">Senior Technician</p>

Planned arrangements for the Recognition of Prior learning(RPL):	Presently, only candidates who undergo training shall be assessed and it will be incorporated once RPL strategy is finalized.		
Licensing Required:	NA		
International comparability where known:	Yes (details available in Section 5)		
Formal structure of the qualification :			
Title of NOS/unit or other component (include any identification code used)	Mandatory/ Optional	Estimated size (learning hours)	Level
I/O devices, Different types of Mother Board and Cards, Different types of RAM	M	40	3
BIOS setup, Partitioning of HDD, Installation of Operating system, Password resetting, Preventive and breakdown maintenance, troubleshooting of sound, USB and LAN	M	30	
Introduction to Application Software, Antivirus Software, Utility Software, Multiple OS	M	40	
Integration of system, Troubleshooting, Power supply, Storage devices, Installation, Repair and maintenance of Keyboard, Mouse, Monitors	M	50	
Types of printers,Printer interface and setting of dip switches, working principles of printers, Types of UPS, UPS replacement and maintenance.	M	30	
Assembly of PC, Maintenance and preventing PC, Backup, Diagnostics tools, Virus protection program	M	50	
Total		240	

Please attach any document giving further detail about the structure of the qualification – e.g. a Curriculum or Qualification Pack. Give details of the document here: Curriculum (Annexure III)

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.

Will the assessment body be responsible for RPL assessment?

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

Presently, only candidates undergoing training shall be assessed. Later on, candidates having experience and knowledge shall be assessed. The information will be provided on finalization of such procedure.

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 the NSQF:

This course would lay more emphasis on developing the practical skills of the student. His overall knowledge shall be tested based on a comprehensive written assessment, his practical skills shall be equally measured with a detailed practical assessment. The communication skills of the student and his ability to express himself shall be tested in Viva Voce Assessment. Each assessment shall define an OUTCOME and marked separately. Student shall be required to pass in all OUTCOMES individually and marks shall be allotted for each OUTCOME along with final aggregate marks in course.

Following assessment methodologies may be used:

- A. Written Assessment (Multiple Choice Questions)
- B. Practical Assessment
- C. Viva Voce Assessment

Supporting evidences for Assessment

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.

ASSESSMENT EVIDENCE

Complete the following grid for each grouping of NOS, assessment unit or other component as listed in the entry on the structure of the qualification.

Job Role

Computer Technician

Assessable Outcomes	Assessment criteria for the outcome	Total Marks	Written	Practical	Viva voce
1. Demonstrate knowledge & Concepts of Computer Fundamental, its Components and the booting process.	Outline Basics of Computer, its working principle and difference between Hardware & Software.	100	10	5	5
	Booting in DOS and Windows environment.		10	5	5
	Interfacing Input/output device.		5	10	5
	Identify Different types of Motherboard and Cards.		10	5	5
	Identify Primary Memory (RAM).		10	5	5
		Total	45	30	25
2. Will be able to setup BIOS, password, Installation of Operating System and preventive maintenance	BIOS Set-up, Boot configuration, Boot Menu	110	5	10	5
	Formatting Hard Disk and Partitioning		5	10	5
	Installation of Operating System i.e. DOS/Windows		5	10	5
	Reset BIOS password		5	5	5
	Procedure to perform Driver backup/restore and data recovery		10	5	5
	Troubleshoot, Sound, USB, LAN problem		5	5	5
		Total	35	45	30
3. Installation of Application software, Antivirus and Utility Software and setting of Dual booting.	Installation of different types of Application software	90	5	15	5
	Installation and Configuring Antivirus		5	10	5
	Basics of Utility software		10	10	5
	Installation of more than one Operating System		5	10	5
		Total	25	45	20
4. Integration of system, Power supply, Storage devices, Installation, Repair and maintenance of keyboard, mouse, Monitors etc.	System integration of different types of computers, such as PC, PCXT, PC-AT etc.	100	5	10	5
	Identification and troubleshooting of different types of faults, cards		5	5	5
	Identify, install and troubleshoot power supply (SMPS)		5	5	5
	Hard Disk drive installation and configuration setting, Use of CD/DVD, FDD drives		5	5	5
	Different types of keyboard & mouse and their Installation and maintenance		5	10	5
	Different types of monitors and their Repairing/ Maintenance		5	5	5
		Total	30	40	30
5. Installation of different types of Printer, UPS, their settings and maintenance	Installation of Different types of printers	100	10	5	5
	Printer interface cable and dip switch setting, self-test and loading of printer drives		5	10	5
	Troubleshoot and repair of LaserJet, DMP, inkjet printer		5	10	5
	Troubleshooting in different types UPS.		10	5	5

	Maintenance and servicing of UPS, battery replacement of UPS		5	10	5
		Total	35	40	25
6. Assembling and Maintenance of PCs like taking Backup, running Diagnostics tools and Virus protection programme etc.	Assembling and dismantling of PCs front panel connection	100	5	10	5
	Maintenance and servicing of computer		5	10	5
	Taking Backup files and fine tuning the system		10	5	5
	Running of diagnostics tool		5	10	5
	Installation of virus protection program.		10	5	5
		Total	35	40	25
Grand Total		600	205	240	155

Means of assessment 1

Proctored online assessments (LAN and Web based), carried out using a variety of question formats applicable for linear / adaptive methodologies; performance criteria being assessed via situation judgement tests, simulations, code writing, psychometrics and multiple choice questions etc.

Pass Percentage

To qualify for a pass for the qualification, a candidate must have obtained at least 50% in each theory and practical examination.

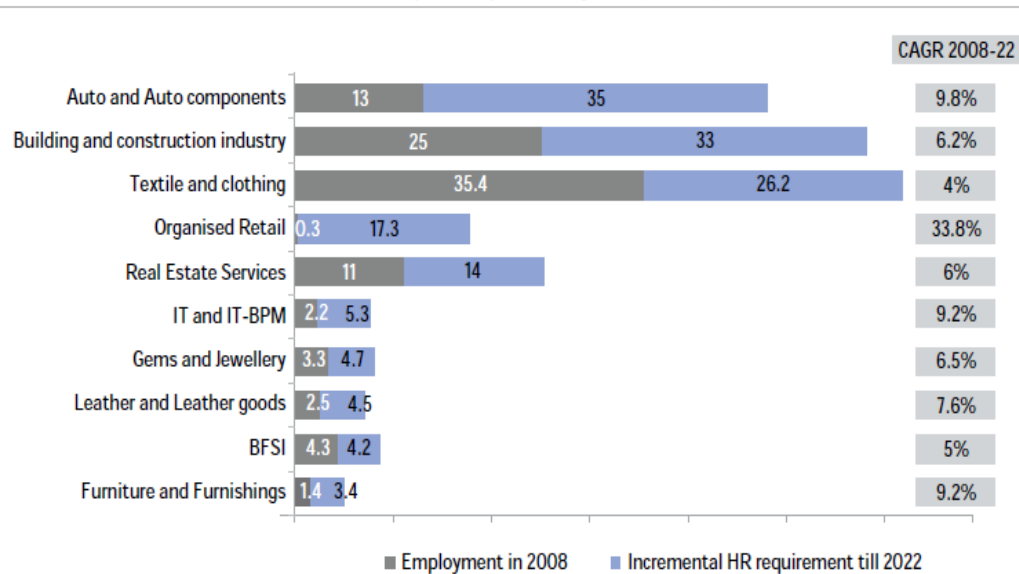
SECTION 2

EVIDENCE OF NEED

What evidence is there that the qualification is needed?

NASSCOM's Projected Growth in Sector-wise Manpower Requirement for IT and IT-BPM is estimated to be 5.3 million by 2022. As this sector is dependent on Computer for their day to day activities there is strong requirement for "Computer Technician" to repair and maintain the Computers. The research documents pertaining to this sub-sector are attached as per Sl.No.1 and 2 respectively (Occupational Analysis report for the sub-sector" and "Talent Demand Supply Analysis Report").

Figure 17: Projected Growth in Sector-wise Manpower Requirement
Growth in manpower requirement by 2022 (in million)



Source: Knowledge Paper on Skill Development in India: Learner first E&Y

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

- Student uptake from Industry.

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

- The qualification Assembly & Maintenance of Personal Computer does not exist as per information available in public domain, National Qualification Register (www.nqr.gov.in)

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 updated?

The Qualification is to be monitored and reviewed every two years.

The following data will be used

1. Results of assessments
2. Employer feedback regarding student skill after conducting a placement drive
3. Employer feedback will be sought post-placement
4. Student feedbacks
5. Workshops and seminar for reviewing the qualifications
6. Consultation/ Tie-up with Industries or Expert for review of the Curriculum.

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

Give details of the document(s) here: Talent Demand Supply Analysis Report(attachment Sl. no. 1)

SECTION 3

SUMMARY EVIDENCE OF LEVEL

Level of Qualification: 3

Summary of Direct Evidence:

Justify the NSQF level allocated to the QP by building upon the five descriptors of NSQF. Explain the reasons for allocating the level to the QP.

Generic NOS is/are linked to the overall authority attached to the job role.

Computer Technician - NL/S/L2/C010					
Process required	Professional knowledge	Professional skill	Core skill	Responsibility	Level
Computer Technician carries out the job to assemble, maintain and troubleshoot which are helpful in running the Computer error free. These jobs are routine and predictable.	After acquiring professional knowledge on assembling, maintaining and troubleshooting the computer, the Computer Technician will be competent to assemble and maintain the computer error free. They can assemble and troubleshoot the computer system when needed.	They are proficient in assembling, maintaining and troubleshooting the computer whenever required based on theoretical and practical knowledge gained during course.	Computer Technician acquire skills on technical level and interact with different stakeholders like vendors, clients and users. They propose solution starting from Assembling, Configuration, Maintenance and troubleshooting the Computer.	They have responsibility in assembling the computer components and maintaining it.	3
3	3	3	3	4	

SECTION 4

EVIDENCE OF RECOGNITION OR 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 this sector?

This qualification comprises both technical and analytic skills and can be linked to any qualification higher than this one, existing or to come. Adequate NOSs / performance criteria have been added to ensure progression to related path ways identified as per the occupational map (ITS).

After completing this course students can further undergo advanced networking qualification “**Networking Specialist (NS)**” which is having learning hours of 780 hrs.

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

Give details of the document(s) here:

- NA

SECTION 5

EVIDENCE OF INTERNATIONAL COMPARABILITY

List any comparisons which have been established

- Muhimbili University of Health and Allied Sciences is offering similar kind of Qualification on “**Computer Hardware & Software Maintenance**” having similar course structure.
(Source: <http://dict.muhas.ac.tz/index.php/ict-trainings/short-courses/computer-maintenance>)
- The University of the West Indies, Open Campus is also offering similar kind of Qualification on “**PC Support/Maintenance**” having similar course structure.
(Source: http://www.open.uwi.edu/sites/default/files/country_sites/PC_Support_Maintenance.pdf)
- Pennfoster career school International is also offering similar kind of Qualification on “**PC Maintenance and Repair**” having similar course structure
(Source: <http://www.pennfosterglobal.com/pcrepair/ProgramOutline.html>)

