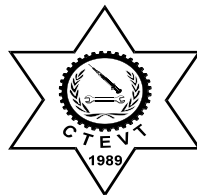


**Curriculum**  
**For**  
**Database Networking Technician**  
**(DNT)**

*(A short term competency based modular curriculum)*



**Council for Technical Education and Vocational Training**  
**(CTEVT)**

**Curriculum Development Division**

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## **Introduction**

This curriculum has been developed with a purpose of preparing “Database Networking Technician” as technical workforce able to get employment in the country. The technical skills incorporated in this curriculum come from the database networking technology. Its contents are organized in the form of modules. So it is a tailor made curriculum with a special purpose to be implemented in a modular form.

It is a competency based curriculum. It is specially designed to produce technical workforce in the field of database networking equipped with skills and knowledge related to database networking technology in order to meet the demand of such workforce in the country so as to contribute in the national streamline of poverty reduction.

## **Aim**

The main aim of this curricular program is to produce lower level skilled workforce in the field of database networking technology by providing training to the interested individuals of the country and link them to employment opportunities.

## **Objectives**

After the completion of this training program, the trainees will be able:

- To be familiar with networking and database basics
- To maintain computer hardware
- To run operating systems
- To handle hardware tools
- To handle software tools
- To analyze/design networks
- To setup/install networks
- To operate/maintain networks
- To maintain network security
- To perform network trouble shooting
- To install database
- To design database
- To perform programmatic control
- To manage roles & privileges
- To maintain database
- To perform database troubleshooting
- To communicate with others
- To develop professionalism

## **Description**

This curriculum provides skills and knowledge necessary for “Database Networking Technician” as a lower level technical worker. There will be both demonstration by trainers/instructors and opportunity by trainees to carry out the skills/tasks necessary for this level of technical workforce. Trainees will practice and learn skills by using typical tools, materials and equipment necessary for this curricular program.

On successful completion of this training, the trainees will be able to maintain computer hardware, run operating systems, handle hardware tools, handle software tools, analyze/design

networks, setup/install networks, operate/maintain networks, maintain network security, perform network trouble shooting, install database, design database, perform programmatic control, manage roles & privileges, maintain database, perform database troubleshooting, communicate with others, and develop professionalism.

## Course structure

<i>Job title: Database networking technician(DNT)</i>			Time(Hrs.)			Marks		
	Modules/sub modules	Nature	Th.	Pr.	Tot.	Th.	Pr.	Tot.
<b>1:</b>	<b>Networking and Database Basics</b>	<b>T + P</b>	<b>8</b>	<b>32</b>	<b>40</b>	<b>3</b>	<b>12</b>	<b>15</b>
<b>2:</b>	<b>Computer Hardware and Operating Systems</b>	<b>T + P</b>	<b>13</b>	<b>48</b>	<b>61</b>	<b>5</b>	<b>20</b>	<b>25</b>
	1: Computer Hardware	T + P	6	26	32			
	2: Operating Systems	T + P	3	12	15			
	3: Hardware Tools	T + P	2	6	8			
	4: Software Tools	T + P	2	4	6			
<b>3:</b>	<b>Networking</b>	<b>T + P</b>	<b>25</b>	<b>109</b>	<b>134</b>	<b>25</b>	<b>100</b>	<b>125</b>
	1: Networks analysis/Designing	T + P	6	27	33			
	2: Networks Setup/Installation	T + P	5	20	25			
	3: Networks Operation/Maintenance	T + P	3	15	18			
	4: Network Security	T + P	3	15	18			
	5: Network Trouble Shooting	T + P	8	32	40			
<b>4:</b>	<b>Database</b>	<b>T + P</b>	<b>27</b>	<b>110</b>	<b>137</b>	<b>25</b>	<b>100</b>	<b>125</b>
	1: Database Installation	T + P	5	20	25			
	2: Database Designing	T + P	4	20	24			
	3: Programmatic Control	T + P	4	16	20			
	4: Managing Roles & Privileges	T + P	4	16	20			
	5: Maintaining Database	T + P	4	16	20			
	6: Database Troubleshooting	T + P	6	22	28			
<b>5:</b>	<b>Communication and Professionalism</b>	<b>T + P</b>	<b>4</b>	<b>14</b>	<b>18</b>	<b>2</b>	<b>8</b>	<b>10</b>
	7: Communication	T + P	2	6	8			
	8: Professionalism Development	T + P	2	8	10			
	<b>Total:</b>		<b>77</b>	<b>313</b>	<b>390</b>	<b>60</b>	<b>240</b>	<b>300</b>

**Duration**

The total duration of this curricular program will be of 390 hours (Three months).

**Target group**

The target group for this training will be all the interested individuals of the country with an academic qualification of SLC pass

**Group size**

The group size of this training program will be not more than 30

**Target location**

The target location of this training program will be all over Nepal.

**Medium of Instruction**

The medium of instruction for this training program will be Nepali or English or both.

**Pattern of attendance**

The trainees should have 80% attendance in theory classes and 90% in practical (performance) to be eligible for internal assessment and final examinations.

**Focus of the curriculum**

This is a competency based curriculum. This curriculum emphasizes on competent performance of the task specified in it. Not less than 80% time is allotted to the competencies and not more than 20% to the related technical knowledge. So, the main focus will be on the performance of the specified competencies/tasks /skills included in this curriculum.

**Entry criteria**

Individuals who meet the following criteria will be allowed to enter in this curricular program:

- SLC pass
- Physically and mentally fit
- Age : Minimum of 18 years old
- Preference will be given to female, Dalit, Anjali, and Conflict affected people

**Follow up suggestion**

This is not a training program only for training sake. The ultimate success of this program will rest on the proficiency of the graduates of this training program in providing services in the community either by wage employment or by self-employment.

In other to assess the success of this program and collect feedbacks/inputs for the revision of the program, a schedule of follow up is suggested as follows:-

- First follow up: - Six months after the completion of the training program.
- Second follow up: - Six months after the completion of the first follow up.
- Follow up cycle: - In a cycle of one year after the completion of second follow up for five years

## **Certificate requirement**

The related training institute will provide the certificate of “**Database Networking Technician**” to those individuals who successfully complete all the tasks with their related technical knowledge specified in this curriculum.

## **Student evaluation details**

- Continuous evaluation of the trainees’ performance is to be done by the related instructor/trainer to ensure the proficiency over each competency.
- Related technical knowledge learnt by the trainees will be evaluated through written or oral tests as per the nature of the content
- Trainees must secure minimum marks of 60% in an average of both theory and practical evaluations

## **Trainers’ qualification**

- Bachelors degree in the related technical field or equivalent
- Good communicative & instructional skills.
- Experience in the related field.

## **Trainer: trainee’s ratio**

- 1:10 for practical classes
- Depends on the nature of subject matter and class room situation for theory classes.
- Minimum of four(4) full time instructors(trainers)

## **Suggestion for instruction**

### **1. Demonstrate task performance**

- Demonstrate task performance in normal speed
- Demonstrate slowly with verbal description of each and every steps in the sequence of activity flow of the task performance using question and answer techniques
- Repeat the above step for the clarification on trainees demand if necessary.
- Perform fast demonstration of the task performance.

### **2. Provide trainees the opportunity to practice the task performance demonstrated**

- Provide trainees to have guided practice:- create environment for practicing the demonstrated task performance and guide the trainees in each and every step of task performance
- Provide trainees the opportunity to repeat & re-repeat as per the need to be proficient on the given task performance
- Switch to another task demonstration if and only if the trainees developed proficiency in the given task performance

### **3. Evaluation performance of the trainees/ student**

- Perform task analysis
- Develop a detail task performance check list
- Perform continuous performance evaluation of the trainees / students by applying the performance check list.

## **List of modules and sub modules**

### **Module: 1: Networking and Database Basics**

### **Module: 2: Computer Hardware and Operating Systems**

Sub module: 1: Computer Hardware

Sub module: 2: Operating Systems

Sub module: 3: Hardware Tools

Sub module: 4: Software Tools

### **Module: 3: Networking**

Sub module: 1: Networks analysis/Designing

Sub module: 2: Networks Setup/Installation

Sub module: 3: Networks Operation/Maintenance

Sub module: 4: Network Security

Sub module: 5: Network Trouble Shooting

### **Module: 4: Database**

Sub module: 1: Database Installation

Sub module: 2: Database Designing

Sub module: 3: Programmatic Control

Sub module: 4: Managing Roles & Privileges

Sub module: 5: Maintaining Database

Sub module: 6: Database Troubleshooting

### **Module: 5: Communication and Professionalism**

Sub module: 7: Communication

Sub module: 8: Professionalism Development



## Details of curriculum

<b>Module: 1: Networking and Database Basics</b>							
	<b>Description:</b> It consists of the skills and knowledge related to electric circuits, digital fundamentals, electronics devices and circuit, networking fundamentals, and database fundamentals.						
	<b>Objective:</b> <ul style="list-style-type: none"> <li>• To be familiar with the analysis / identification of basic electric circuits</li> <li>• To be familiar with logic circuits / gates</li> <li>• To be familiar with basic electronics concepts</li> <li>• To be familiar with network fundamentals / its advantages</li> <li>• To be familiar with database fundamentals</li> </ul>						
	<b>Skills:</b> Each skill consists of a skill statement and related technical knowledge that must to know in order to be able to carry out that very skill.						
	8 hrs. (Th.) + 32hrs. (Pr.) = 40 hrs. (Tot.)				Time(Hrs.)		
SN	Skills	Related technical knowledge	Th.	Pr.	Tot.		
	<b><u>Electric Circuits</u></b>						
1.	State Ohm's law	<b><u>Ohm's law:</u></b> <ul style="list-style-type: none"> <li>• Definition of voltage</li> <li>• Definition of current</li> <li>• Definition resistance</li> <li>• Units of voltage, current and resistance</li> <li>• Relation among current, resistance and voltage</li> <li>• Calculation of current, resistance and voltage</li> </ul>	0.4	1.8	2.2		
2.	Explain the concept of AC and DC	<b><u>AC and DC:</u></b> <ul style="list-style-type: none"> <li>• Concept of AC(alternating current)</li> <li>• Concept of DC (direct Current)</li> <li>• Difference between AC and DC</li> <li>• Secondary voltage = Primary voltage (secondary turns / primary turns)</li> <li>• Secondary current = Primary current (primary turns / secondary turns)</li> <li>• Uses of AC and DC</li> </ul>	0.4	1.8	2.2		
3.	Describe electrical devices (Switch,	<b><u>Electrical devices (Switch,</u></b>	0.4	1.8	2.2		

	Capacitor, Resistor, Transformer, LED, Fuse and Battery)	<p><b><u>Capacitor, Resistor, Transformer, LED, Fuse and Battery):</u></b></p> <ul style="list-style-type: none"> <li>• Identification and function of: <ul style="list-style-type: none"> <li>▪ Switch</li> <li>▪ Capacitor</li> <li>▪ Resistor</li> <li>▪ Transformer</li> <li>▪ LED</li> <li>▪ Fuse</li> <li>▪ Battery</li> </ul> </li> <li>• Main switch and its capacity</li> <li>• Determination of fuses/mcbs and their Amperage capacity</li> <li>• Energy meter and their amperage capacity</li> <li>• Testing instrument and their uses</li> <li>• Safety precautions</li> </ul>				
4.	Analyses Simple Electric circuit	<p><b><u>Simple Electric circuit:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of electric circuit</li> <li>• Simple electric circuit diagram and its interpretation</li> </ul>	0.4	1.9	2.3	
	<b><u>Digital Fundamentals</u></b>	<b><u>Digital Fundamentals</u></b>	0	0	0	
5.	Explain the concept of digital/ analog circuits	<p><b><u>Digital/ analog circuits:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of digital circuit</li> <li>• Concept of analog circuit</li> <li>• Different between digital circuit and analog circuit</li> <li>• Interpretation of digital circuit and analog circuit</li> </ul>	0.4	1.9	2.3	
6.	State logic gates (AND, OR and NOT)	<p><b><u>Logic gates (AND, OR and NOT):</u></b></p> <ul style="list-style-type: none"> <li>• Concept of logic gates</li> <li>• Different logic gates(AND, OR and NOT)</li> </ul>	0.5	1.9	2.4	
7.	Differentiate the concept of Truth Table and Boolean algebra	<p><b><u>Difference between Truth Table and Boolean algebra:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of truth table</li> <li>• Concept of boolean algebra</li> <li>• Difference between truth table and boolean algebra</li> </ul>	0.5	1.9	2.4	
	<b><u>Electronics Devices and Circuit</u></b>	<b><u>Electronics Devices and</u></b>	0	0	0	

			<b><u>Circuit</u></b>				
8.	State the concept of Integrated Chips		<b><u>Integrated Chips:</u></b> <ul style="list-style-type: none"> <li>• Concept of integrated chips</li> <li>• Types of chips</li> <li>• Identification of chips</li> </ul>	0.5	1.9	2.4	
9.	State the concept of MOS		<b><u>MOS:</u></b> <ul style="list-style-type: none"> <li>• Concept of MOS</li> </ul>	0.5	1.9	2.4	
10.	State the concept of BIOS		<b><u>BIOS:</u></b> <ul style="list-style-type: none"> <li>• Concept of BIOS</li> </ul>	0.5	1.9	2.4	
		<b><u>Networking Fundamentals</u></b>	<b><u>Networking Fundamentals</u></b>	0	0	0	
11.	Introduce Computer Network		<b><u>Computer Network:</u></b> <ul style="list-style-type: none"> <li>• Definition of computer network</li> <li>• Importance of computer network</li> <li>• Computer network system</li> </ul>	0.5	1.9	2.4	
12.	State the concept of Internet/ Web Browser/ Website		<b><u>Internet/ Web Browser/ Website:</u></b> <ul style="list-style-type: none"> <li>• Concept of internet, web browser and website</li> <li>• Browsing different sites</li> </ul>	0.5	1.9	2.4	
13.	Enlist the advantage of network computer over the stand alone		<b><u>Advantage of network computer over the stand alone:</u></b> <ul style="list-style-type: none"> <li>• Advantage of network computer</li> <li>• Disadvantage of network computer</li> </ul>	0.5	1.9	2.4	
14.	Differentiate between client and server model		<b><u>Client and server model:</u></b> <ul style="list-style-type: none"> <li>• Concept of client model</li> <li>• Concept of server model</li> <li>• Difference between client model and server model</li> </ul>	0.5	1.9	2.4	
15.	State the concept of Network Operating System		<b><u>Network Operating System:</u></b> <ul style="list-style-type: none"> <li>• Concept of network</li> <li>• Concept of network Operating system</li> </ul>	0.5	1.9	2.4	
		<b><u>Database Fundamentals</u></b>	<b><u>Database Fundamentals</u></b>	0	0	0	
16.	Explain the concept of Database and its advantages over file system		<b><u>Database and its advantages over file system:</u></b> <ul style="list-style-type: none"> <li>• Concept of database</li> <li>• Advantages of database over file system</li> </ul>	0.5	1.9	2.4	
17.	Discuss database environment and development process		<b><u>Database environment and development process:</u></b> <ul style="list-style-type: none"> <li>• Introduction to database</li> </ul>	0.5	1.9	2.4	

		environment				
		<ul style="list-style-type: none"> <li>Database development process</li> </ul>				
			Total:	8	32	40
		<b>Module: 2: Computer Hardware and Operating Systems</b>				
		<b>Description:</b> This module consists of the knowledge and skills related to maintaining computer hardware, running operating systems, and handling of software and hardware tools.				
		<b>Objectives:</b> <ul style="list-style-type: none"> <li>To Maintain Computer Hardware</li> <li>To Run Operating Systems</li> <li>To Handle Hardware Tools</li> <li>To Handle Software Tools</li> </ul>				
		<b>Sub modules:</b> <ol style="list-style-type: none"> <li>Computer Hardware</li> <li>Operating Systems</li> <li>Hardware Tools</li> <li>Software Tools</li> </ol>				
		<b>Sub module: 1: Computer Hardware</b>				
		<b>Description:</b> This module consists of the knowledge and skills related to maintaining computer hardware.				
		<b>Objective:</b> <ul style="list-style-type: none"> <li>To Maintain Computer Hardware</li> </ul>				
		<b>Tasks:</b> Each task consists of a task statement and related technical knowledge that must to know in order to be able to carry out that very task.				
		6 hrs. (Th.) + 26hrs. (Pr.) = 32 hrs. (Tot.)			Time(Hrs.)	
SN	Tasks	Related technical knowledge		Th.	Pr.	Tot.
1.	Maintain motherboard	<b><u>Motherboard:</u></b> <ul style="list-style-type: none"> <li>Concept, need and importance of motherboard</li> <li>Identification of motherboard</li> <li>Application/functions of motherboard</li> <li>Procedure for maintaining/care for motherboard</li> <li>Related safety precautions to be followed</li> <li>Related records to be kept</li> </ul>		0.4	1.5	1.9
2.	Maintain ROM/CD-ROM	<b><u>ROM/CD-ROM :</u></b> <ul style="list-style-type: none"> <li>Concept, need and importance of ROM/CD-ROM</li> <li>Identification of ROM/CD-ROM</li> </ul>		0.4	1.5	1.9

			<ul style="list-style-type: none"> <li>• Application/functions of ROM/CD-ROM</li> <li>• Procedure for maintaining/care for ROM/CD-ROM</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>				
3.	Maintain CACHE	<p><b><u>CACHE:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of CACHE</li> <li>• Identification of CACHE</li> <li>• Application/functions of CACHE</li> <li>• Procedure for maintaining/care for CACHE</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.4	1.5	1.9		
4.	Maintain Memory /RAM	<p><b><u>Memory /RAM:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of memory /RAM</li> <li>• Identification of memory /RAM</li> <li>• Application/functions of memory /RAM</li> <li>• Procedure for maintaining/care for memory /RAM</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.4	1.5	1.9		
5.	Maintain CPU	<p><b><u>CPU:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of CPU</li> <li>• Identification of CPU</li> <li>• Application/functions of CPU</li> <li>• Procedure for maintaining/care for CPU</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.4	1.5	1.9		
6.	Maintain ATX-Power	<p><b><u>ATX-Power:</u></b></p>	0.4	1.5	1.9		

			<ul style="list-style-type: none"> <li>• Concept, need and importance of ATX-power</li> <li>• Identification of ATX-power</li> <li>• Application/functions of ATX-power</li> <li>• Procedure for maintaining/care for ATX-power</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>				
7.	Maintain UPS /Keyboard	<p><b><u>UPS /Keyboard:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of UPS /keyboard</li> <li>• Identification of UPS /keyboard</li> <li>• Application/functions of UPS /keyboard</li> <li>• Procedure for maintaining/care for UPS /keyboard</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.3	1.5	1.8		
8.	Maintain mouse	<p><b><u>Mouse:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of mouse</li> <li>• Identification of mouse</li> <li>• Application/functions of mouse</li> <li>• Procedure for maintaining/care for mouse</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.3	1.5	1.8		
9.	Maintain BUS	<p><b><u>BUS:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of BUS</li> <li>• Identification of BUS</li> <li>• Application/functions of BUS</li> <li>• Procedure for maintaining/care for BUS</li> <li>• Related safety precautions to</li> </ul>	0.3	1.4	1.7		

			<ul style="list-style-type: none"> <li>• be followed</li> <li>• Related records to be kept</li> </ul>				
10.	Maintain Serial BUS	<p><b><u>Serial BUS:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of serial BUS</li> <li>• Identification of serial BUS</li> <li>• Application/functions of serial BUS</li> <li>• Procedure for maintaining/care for serial BUS</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.3	1.4	1.7		
11.	Maintain Parallel BUS	<p><b><u>Parallel BUS :</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of parallel BUS</li> <li>• Identification of parallel BUS</li> <li>• Application/functions of parallel BUS</li> <li>• Procedure for maintaining/care for parallel BUS</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.3	1.4	1.7		
12.	Maintain PCI slot	<p><b><u>PCI slot:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of PCI slot</li> <li>• Identification of PCI slot</li> <li>• Application/functions of PCI slot</li> <li>• Procedure for maintaining/care for PCI slot</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.3	1.4	1.7		
13.	Maintain expansion slot	<p><b><u>Expansion slot:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of expansion slot</li> <li>• Identification of expansion slot</li> <li>• Application/functions of expansion slot</li> <li>• Procedure for</li> </ul>	0.3	1.4	1.7		

			<p>maintaining/care for expansion slot</p> <ul style="list-style-type: none"> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>				
14.	Maintain Networking Device		<p><b><u>Networking Device:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of networking device</li> <li>• Identification of <b>various networking devices</b></li> <li>• Application/functions of networking device</li> <li>• Procedure for maintaining/care for networking device</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.6	2.8	3.4	
15.	Maintain LAN-Card/ <b>NIC-Card</b>		<p><b><u>LAN-Card/NIC-Card:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of LAN-card/ <b>NIC-Card</b></li> <li>• Identification of LAN-card/ <b>NIC-Card</b></li> <li>• Application/functions of LAN-card/ <b>NIC-Card</b></li> <li>• Procedure for maintaining/care for LAN-card/ <b>NIC-Card</b></li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.3	1.4	1.7	
16.	Maintain Ethernet		<p><b><u>Ethernet:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of Ethernet</li> <li>• Identification of Ethernet</li> <li>• Application/functions of Ethernet</li> <li>• Procedure for maintaining/care for Ethernet</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.3	1.4	1.7	
17.	Maintain USB		<p><b><u>USB:</u></b></p>	0.3	1.4	1.7	



		<ul style="list-style-type: none"> <li>• Concept, need and importance of USB</li> <li>• Identification of USB</li> <li>• Application/functions of USB</li> <li>• Procedure for maintaining/care for USB</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>				
			Total:	6	26	32
<b>Sub module: 2: Operating Systems</b>						
	<b>Description:</b> This module consists of the knowledge and skills related to running operating systems.					
	<b>Objective:</b> <ul style="list-style-type: none"> <li>• To Run Operating Systems</li> </ul>					
	<b>Tasks:</b> Each task consists of a task statement and related technical knowledge that must to know in order to be able to carry out that very task.					
	3 hrs. (Th.) + 12 hrs. (Pr.) = 15 hrs. (Tot.)			Time(Hrs.)		
SN	Tasks	Related technical knowledge	Th.	Pr.	Tot.	
1.	Run/Install window XP	<b><u>Window XP:</u></b> <ul style="list-style-type: none"> <li>• Concept, need and importance of window XP</li> <li>• Functions and uses of window XP</li> <li>• How to install window XP</li> <li>• How to run window XP</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.5	2	2.5	
2.	Run/Install Window 7/Linux	<b><u>Window 7/Linux:</u></b> <i>Window 7:</i> <ul style="list-style-type: none"> <li>• Concept, need and importance of Window 7</li> <li>• Functions and uses of Window 7</li> <li>• How to install Window 7</li> <li>• How to run Window 7</li> </ul> <i>Linux:</i> <ul style="list-style-type: none"> <li>• Concept, need and importance of Linux</li> <li>• Functions and uses of Linux</li> <li>• How to install Linux</li> <li>• How to run Linux</li> </ul>	0.5	4	4.5	

			<p><i>Precautions and recordings:</i></p> <ul style="list-style-type: none"> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>				
3.	Manage file / folder	<p><b><u>file / folder:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of file / folder</li> <li>• Functions and uses of file / folder</li> <li>• How to manage file / folder</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.4	2	2.4		
4.	Install Software	<p><b><u>Installation of software:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of software</li> <li>• <b>Types</b> and uses of software</li> <li>• How to install software</li> <li>• How to run software</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.4	1	1.4		
5.	Uninstall S/W	<p><b><u>Uninstalling S/W:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of uninstalling software</li> <li>• Why to uninstall software</li> <li>• How to uninstall software</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.4	1	1.4		
6.	Manage Device / Drivers	<p><b><u>Device / Drivers:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of managing device / drivers</li> <li>• Functions and uses of device / drivers</li> <li>• How to manage device / drivers</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.4	1	1.4		
7.	Manage/Setup IP <b>address</b> /DNS	<p><b><u>IP <b>address</b> /DNS:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of IP <b>address</b> /</li> </ul>	0.4	1	1.4		

			<p style="color: red;">DNS</p> <ul style="list-style-type: none"> <li>• Functions and uses of IP address /DNS</li> <li>• How to manage/setup IP address /DNS</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>					
			Total:	3	12	15		
<b>Sub module: 3: Hardware Tools</b>								
	<b>Description:</b> This module consists of the knowledge and skills related to handling of hardware tools.							
	<b>Objective:</b>							
	<ul style="list-style-type: none"> <li>• To Handle Hardware Tools</li> </ul>							
	<b>Tasks:</b> Each task consists of a task statement and related technical knowledge that must to know in order to be able to carry out that very task.							
	2 hrs. (Th.) + 6 hrs. (Pr.) = 8 hrs. (Tot.)			Time(Hrs.)				
SN	Task	Related technical knowledge			Th.	Pr.	Tot.	
1.	Handle Flat Screw Driver (-)	<p><b><u>Handling of Flat Screw Driver (-):</u></b></p> <ul style="list-style-type: none"> <li>• Identification of flat screw driver (-)</li> <li>• Functions/uses/application of flat screw driver (-)</li> <li>• Handling of flat screw driver (-)</li> <li>• Care and simple maintenance of flat screw driver (-)</li> <li>• Storage of flat screw driver (-)</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>			0.2	0.3	0.5	
2.	Handle Cross Screw Driver (+)	<p><b><u>Handling of Cross Screw Driver (+):</u></b></p> <ul style="list-style-type: none"> <li>• Identification of cross screw driver (+)</li> <li>• Functions/uses/application of cross screw driver (+)</li> <li>• Handling of cross screw driver (+)</li> <li>• Care and simple maintenance of</li> <li>• Storage of cross screw driver (+)</li> </ul>			0.2	0.3	0.5	

			<ul style="list-style-type: none"> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>				
3.	Handle Pliers	<p><b><u>Handling of Pliers:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of Pliers</li> <li>• Functions/uses/application of Pliers</li> <li>• Handling of Pliers</li> <li>• Care and simple maintenance of Pliers</li> <li>• Storage of Pliers</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.2	0.3	0.5		
4.	Handle Drill Machine	<p><b><u>Handling of Drill Machine:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of drill machine</li> <li>• Functions/uses/application of drill machine</li> <li>• Handling of drill machine</li> <li>• Care and simple maintenance of drill machine</li> <li>• Storage of drill machine</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.2	0.3	0.5		
5.	Handle Multimeter	<p><b><u>Handling of Multimeter:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of Multimeter</li> <li>• Functions/uses/application of Multimeter</li> <li>• Handling of Multimeter</li> <li>• Care and simple maintenance of Multimeter</li> <li>• Storage of Multimeter</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.1	0.4	0.5		
6.	Handle Network Tester	<p><b><u>Handling of Network Tester:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of network tester</li> <li>• Functions/uses/application of network tester</li> <li>• Handling of network tester</li> <li>• Care and simple maintenance of network tester</li> <li>• Storage of network tester</li> </ul>	0.1	0.4	0.5		

			<ul style="list-style-type: none"> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>				
7.	Handle Modular Jack	<p><b><u>Handling of Modular Jack:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of modular jack</li> <li>• Functions/uses/application of modular jack</li> <li>• Handling of modular jack</li> <li>• Care and simple maintenance of modular jack</li> <li>• Storage of modular jack</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.1	0.4	0.5		
8.	Handle Patch Panel	<p><b><u>Handling of Patch Panel:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of patch panel</li> <li>• Functions/uses/application of patch panel</li> <li>• Handling of patch panel</li> <li>• Care and simple maintenance of patch panel</li> <li>• Storage of patch panel</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.1	0.4	0.5		
9.	Handle Punch down Tool	<p><b><u>Handling of Punch down Tool:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of punch down tool</li> <li>• Functions/uses/application of punch down tool</li> <li>• Handling of punch down tool</li> <li>• Care and simple maintenance of punch down tool</li> <li>• Storage of punch down tool</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.1	0.4	0.5		
10.	Handle RJ 11	<p><b><u>Handling of RJ 11:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of RJ 11</li> <li>• Functions/uses/application of RJ 11</li> <li>• Handling of RJ 11</li> <li>• Care and simple maintenance of RJ 11</li> <li>• Storage of RJ 11</li> </ul>	0.1	0.4	0.5		

			<ul style="list-style-type: none"> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>				
11.	Handle RJ 45	<p><b><u>Handling of RJ 45:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of RJ 45</li> <li>• Functions/uses/application of RJ 45</li> <li>• Handling of RJ 45</li> <li>• Care and simple maintenance of RJ 45</li> <li>• Storage of RJ 45</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.1	0.4	0.5		
12.	Handle Clamper	<p><b><u>Handling of Clamper:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of clamper</li> <li>• Functions/uses/application of clamper</li> <li>• Handling of clamper</li> <li>• Care and simple maintenance of clamper</li> <li>• Storage of clamper</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.1	0.4	0.5		
13.	Handle Network Cables (Cat-5/Cat 6)	<p><b><u>Handling of Network Cables (Cat-5/Cat 6):</u></b></p> <ul style="list-style-type: none"> <li>• Identification of network cables (Cat-5/Cat 6)</li> <li>• Functions/uses/application of network cables (Cat-5/Cat 6)</li> <li>• Handling of network cables (Cat-5/Cat 6)</li> <li>• Care and simple maintenance of network cables (Cat-5/Cat 6)</li> <li>• Storage of network cables (Cat-5/Cat 6)</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.1	0.4	0.5		
14.	Handle Console Cable	<p><b><u>Handling of Console Cable:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of console cable</li> <li>• Functions/uses/application of console cable</li> </ul>	0.1	0.4	0.5		

			<ul style="list-style-type: none"> <li>• Handling of console cable</li> <li>• Care and simple maintenance of console cable</li> <li>• Storage of console cable</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>				
15.	Handle Hub/Switch	<p><b><u>Handling of Hub/Switch:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of hub/switch</li> <li>• Functions/uses/application of hub/switch</li> <li>• Handling of hub/switch</li> <li>• Care and simple maintenance of hub/switch</li> <li>• Storage of hub/switch</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.1	0.4	0.5		
16.	Handle Router	<p><b><u>Handling of Router:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of router</li> <li>• Functions/uses/application of router</li> <li>• Handling of router</li> <li>• Care and simple maintenance of router</li> <li>• Storage of router</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.1	0.4	0.5		
			Total:	2	6	8	
<b>Sub module: 4: Software Tools</b>							
	<b>Description:</b> This module consists of the knowledge and skills related to handling of software tools.						
	<b>Objective:</b>						
	<ul style="list-style-type: none"> <li>• To Handle Software Tools</li> </ul>						
	<b>Tasks:</b> Each task consists of a task statement and related technical knowledge that must to know in order to be able to carry out that very task.						
	2 hrs. (Th.) + 4 hrs. (Pr.) = 6 hrs. (Tot.)			Time(Hrs.)			
SN	Tasks	Related technical knowledge		Th.	Pr.	Tot.	
1.	Handle PING	<p><b><u>Handling of PING:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of PING</li> <li>• Uses of PING</li> <li>• Handling of PING</li> <li>• Related safety precautions to</li> </ul>	0.4	0.6	1		

			<ul style="list-style-type: none"> <li>• be followed</li> <li>• Related records to be kept</li> </ul>					
2.	Handle TELENET	<p><b><u>Handling of TELENET:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of TELENET</li> <li>• Uses of TELENET</li> <li>• Handling of TELENET</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.4	0.6	1			
3.	Handle SSH	<p><b><u>Handling of SSH:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of SSH</li> <li>• Uses of SSH</li> <li>• Handling of SSH</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.3	0.7	1			
4.	Handle SQL Server (Structured Query language)	<p><b><u>Handling of SQL Server (Structured Query language):</u></b></p> <ul style="list-style-type: none"> <li>• Identification of SQL server (structured query language)</li> <li>• Uses of SQL server (structured query language)</li> <li>• Handling of SQL server (structured query language)</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.3	0.7	1			
5.	Handle Nagios	<p><b><u>Handling of Nagios:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of Nagios</li> <li>• Uses of Nagios</li> <li>• Handling of Nagios</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.3	0.7	1			
6.	Handle MRTG	<p><b><u>Handling of MRTG:</u></b></p> <ul style="list-style-type: none"> <li>• Identification of MRTG</li> <li>• Uses of MRTG</li> <li>• Handling of MRTG</li> <li>• Related safety precautions to be followed</li> <li>• Related records to be kept</li> </ul>	0.3	0.7	1			
			Total:	2	4	6		
<b>Module: 3: Networking</b>								



	<b>Description:</b> This module consists of the knowledge and skills related to analyzing/designing networks, setting up/installing networks, operating/maintaining networks, maintaining network security, and performing network trouble shooting.				
	<b>Objectives:</b> <ul style="list-style-type: none"> <li>To Analyze/design Networks</li> <li>To Setup/Install Networks</li> <li>To Operate/Maintain Networks</li> <li>To Maintain Network Security</li> <li>To Perform Network Trouble Shooting</li> </ul>				
	<b>Sub modules:</b> <ol style="list-style-type: none"> <li>Networks analysis/Designing</li> <li>Networks Setup/Installation</li> <li>Networks Operation/Maintenance</li> <li>Network Security</li> <li>Network Trouble Shooting</li> </ol>				
	<b>Sub module: 1: Networks analysis/Designing</b>				
	<b>Description:</b> This module consists of the knowledge and skills related to analyzing/designing networks.				
	<b>Objective:</b> <ul style="list-style-type: none"> <li>To Analyze/design Networks</li> </ul>				
	<b>Tasks:</b> Each task consists of a task statement and related technical knowledge that must to know in order to be able to carry out that very task.				
	6 hrs. (Th.) + 27 hrs. (Pr.) = 33 hrs. (Tot.)		Time(Hrs.)		
SN	Tasks	Related technical knowledge	Th.	Pr.	Tot.
1.	Analyze Size of Network	<b><u>Size of Network:</u></b> <ul style="list-style-type: none"> <li>Concept of the size of network</li> <li>Concept of analyzing the size of network</li> <li>Why to analyze the size of network</li> <li>How to analyze the size of network</li> <li>Related precautions to be taken</li> <li>Related records to be kept</li> </ul>	0.6	3	3.6
2.	Analyze Type of Network[ Wired(LAN/MAN/WAN) /Wireless(LAN/MAN/WAN)]	<b><u>Type of Network</u></b> <b><u>[Wired(LAN/MAN/WAN)</u></b> <b><u>Wireless(LAN/MAN/WAN)]:</u></b> <ul style="list-style-type: none"> <li>Concept of network</li> <li>Types of network: <ul style="list-style-type: none"> <li>Wired network –LAN,MAN &amp;WAN</li> <li>Wireless network-</li> </ul> </li> </ul>	0.6	3	3.6

			<p>LAN,MAN&amp;WAN</p> <ul style="list-style-type: none"> <li>• Analyzing types of networks</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>			
3.	Design Network Topology(Star/Ring/Bus)	<p><b><u>Network Topology(Star/Ring/Bus):</u></b></p> <ul style="list-style-type: none"> <li>• Concept of network topology(Star/Ring/Bus)</li> <li>• Uses of network topology(Star/Ring/Bus)</li> <li>• Why and how to design network topology(Star/Ring/Bus)</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.6	3	3.6	
4.	Design Network Standard (OSI)	<p><b><u>Network Standard (OSI):</u></b></p> <ul style="list-style-type: none"> <li>• Concept of network standard (OSI)</li> <li>• Uses of network standard (OSI)</li> <li>• How to design network standard (OSI)</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.6	3	3.6	
5.	Design Network Standard (TCP/IP)	<p><b><u>Network Standard(TCP/IP):</u></b></p> <ul style="list-style-type: none"> <li>• Concept of network standard (TCP/IP)</li> <li>• Uses of network standard (TCP/IP)</li> <li>• Why to design network standard (TCP/IP)</li> <li>• How to design network standard (TCP/IP)</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.6	3	3.6	
6.	Design Using Simulator (Packet Tracer)/cisco	<p><b><u>Designing by Using Simulator (Packet Tracer)/cisco:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of using simulator (packet tracer)/cisco</li> <li>• Uses of simulator (packet tracer)/cisco</li> </ul>	0.5	2	2.5	

			<ul style="list-style-type: none"> <li>• Why and how to design using simulator (packet tracer)/cisco</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>				
7.	Analyze Switching Technique	<p><b><u>Switching Technique:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of switching technique</li> <li>• Concept of analyzing switching technique</li> <li>• Why to analyze switching technique</li> <li>• How to analyze switching technique</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.5	2	2.5		
8.	Design IP Addressing (Static IP /Dynamic IP)	<p><b><u>IP Addressing (Static IP/ Dynamic IP):</u></b></p> <ul style="list-style-type: none"> <li>• Concept of IP addressing</li> <li>• Types of IP Addressing -static IP &amp; dynamic IP</li> <li>• Uses of IP Addressing (static IP &amp; dynamic IP)</li> <li>• Why and how to design IP Addressing (static IP &amp; dynamic IP)</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.5	2	2.5		
9.	Analyze Static Routing	<p><b><u>Static Routing:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of routing</li> <li>• Types of routing- static &amp; dynamic</li> <li>• Concept of static routing</li> <li>• Concept of analyzing static routing</li> <li>• Why to analyze static routing</li> <li>• How to analyze static routing</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.5	2	2.5		
10.	Analyze Dynamic Routing	<p><b><u>Dynamic Routing:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of dynamic routing</li> <li>• Concept of analyzing</li> </ul>	0.5	2	2.5		

			<ul style="list-style-type: none"> <li>dynamic routing</li> <li>Why to analyze dynamic routing</li> <li>How to analyze dynamic routing</li> <li>Related precautions to be taken</li> <li>Related records to be kept</li> </ul>					
11.	Analyze Network Bandwidth Requirement	<ul style="list-style-type: none"> <li><b>Network Bandwidth Requirement:</b></li> <li>Concept of network bandwidth requirement</li> <li>Concept of analyzing network bandwidth requirement</li> <li>Why to analyze network bandwidth requirement</li> <li>How to analyze network bandwidth requirement</li> <li>Related precautions to be taken</li> <li>Related records to be kept</li> </ul>	0.5	2	2.5			
			Total:	6	27	33		
<b>Sub module: 2: Networks Setup/Installation</b>								
	<b>Description:</b> This module consists of the knowledge and skills related to setting up/installing networks.							
	<b>Objective:</b>							
	<ul style="list-style-type: none"> <li>To Setup/Install Networks</li> </ul>							
	<b>Tasks:</b> Each task consists of a task statement and related technical knowledge that must to know in order to be able to carry out that very task.							
	5 hrs. (Th.) + 20 hrs. (Pr.) = 25 hrs. (Tot.)			Time(Hrs.)				
SN	Tasks	Related technical knowledge		Th.	Pr.	Tot.		
1.	Setup/Install Clamping	<b>Clamping:</b> <ul style="list-style-type: none"> <li>Concept, need and importance of clamping</li> <li>Procedures for setting up/installing clamping</li> <li>Related precautions to be taken</li> <li>Related records to be kept</li> </ul>		1	4	5		
2.	Setup/Install Cabling <b>Straight / Crossover</b>	<b>Cabling <u>Straight / Crossover</u>:</b> <ul style="list-style-type: none"> <li>Concept, need and importance of cabling <b>straight / crossover</b></li> </ul>		1	4	5		

		<ul style="list-style-type: none"> <li>Procedures for setting up/installing cabling <b>straight / crossover</b></li> <li>Related precautions to be taken</li> <li>Related records to be kept</li> </ul>				
3.	Setup/Install DHCP Manual/ IP Configuration	<p><b><u>DHCP Manual /IP Configuration:</u></b></p> <ul style="list-style-type: none"> <li>Concept, need and importance of DHCP manual /IP configuration</li> <li>Procedures for setting up/installing DHCP manual /IP configuration</li> <li>Related precautions to be taken</li> <li>Related records to be kept</li> </ul>	1	4	5	
4.	Setup/Install DNS	<p><b><u>DNS:</u></b></p> <ul style="list-style-type: none"> <li>Concept, need and importance of DNS</li> <li>Procedures for setting up/installing DNS</li> <li>Related precautions to be taken</li> <li>Related records to be kept</li> </ul>	1	4	5	
5.	Setup Network Wizard	<p><b><u>Network Wizard:</u></b></p> <ul style="list-style-type: none"> <li>Concept, need and importance of network wizard</li> <li>Procedures for setting up/installing network wizard</li> <li>Related precautions to be taken</li> <li>Related records to be kept</li> </ul>	1	4	5	
		Total:	5	20	25	
<b>Sub module: 3: Networks Operation/Maintenance</b>						
	<b>Description:</b> This module consists of the knowledge and skills related to operating/maintaining networks.					
	<b>Objective:</b>					
	<ul style="list-style-type: none"> <li>To Operate/Maintain Networks</li> </ul>					
	<b>Tasks:</b> Each task consists of a task statement and related technical knowledge that must to know in order to be able to carry out that very task.					
	3 hrs. (Th.) + 15 hrs. (Pr.) = 18 hrs. (Tot.)		Time(Hrs.)			
SN	Tasks	Related technical knowledge	Th.	Pr.	Tot.	
1.	Operate/maintain File/Folder	<b><u>File/Folder sharing:</u></b>	0.6	3	3.6	

	sharing	<ul style="list-style-type: none"> <li>• Concept of file/folder/ file sharing /folder sharing</li> <li>• Identification of file/folder</li> <li>• Function/uses of file/folder sharing</li> <li>• How to operate file/folder sharing</li> <li>• How to maintain file/folder sharing</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>				
2.	Operate/Maintain Printer Sharing	<p><b><u>Printer Sharing:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of printer /printer sharing</li> <li>• Identification of printer</li> <li>• Function/uses of printer sharing</li> <li>• How to operate printer sharing</li> <li>• How to maintain printer sharing</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.6	3	3.6	
3.	Operate/Maintain Scanner Sharing	<p><b><u>Scanner Sharing:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of scanner /scanner sharing</li> <li>• Identification of scanner</li> <li>• Function/uses of scanner sharing</li> <li>• How to operate scanner sharing</li> <li>• How to maintain scanner sharing</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.6	3	3.6	
4.	Operate/maintain FTP (File transfer protocol)	<p><b><u>FTP (File transfer protocol):</u></b></p> <ul style="list-style-type: none"> <li>• Concept of FTP (file transfer protocol)</li> <li>• Identification of FTP (file transfer protocol)</li> <li>• Function/uses of FTP (file transfer protocol)</li> </ul>	0.6	3	3.6	

			<ul style="list-style-type: none"> <li>• How to operate FTP (file transfer protocol)</li> <li>• How to maintain FTP (file transfer protocol)</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>					
5.	Operate/Maintain E-mail	<b><u>E-mail:</u></b> <ul style="list-style-type: none"> <li>• Concept of E-mail</li> <li>• Function/uses of E-mail</li> <li>• How to operate E-mail</li> <li>• How to maintain E-mail</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.6	3	3.6			
			Total:	3	15	18		
<b>Sub module: 4: Network Security</b>								
	<b>Description:</b> This module consists of the knowledge and skills related to maintaining network security.							
	<b>Objective:</b> <ul style="list-style-type: none"> <li>• To Maintain Network Security</li> </ul>							
	<b>Tasks:</b> Each task consists of a task statement and related technical knowledge that must to know in order to be able to carry out that very task.							
	3 hrs. (Th.) + 15 hrs. (Pr.) = 18 hrs. (Tot.)			Time(Hrs.)				
SN	Tasks	Related technical knowledge		Th.	Pr.	Tot.		
1.	Maintain IP Filtering	<b><u>IP Filtering:</u></b> <ul style="list-style-type: none"> <li>• Concept, need and importance of IP filtering</li> <li>• Why and how to maintain IP filtering</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>		0.5	3	3.5		
2.	Maintain MAC Address Binding	<b><u>MAC Address Binding:</u></b> <ul style="list-style-type: none"> <li>• Concept, need and importance of MAC address binding</li> <li>• Why and how to maintain MAC address binding</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>		0.5	3	3.5		
3.	Maintain Authentication Login Credentials	<b><u>Authentication Login Credentials:</u></b>		0.5	3	3.5		

			<ul style="list-style-type: none"> <li>• Concept, need and importance of authentication login credentials</li> <li>• Why and how to maintain authentication login credentials</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>					
4.	Maintain URL Filtering	<p><b><u>URL Filtering:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of URL filtering</li> <li>• Why and how to maintain URL filtering</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.5	2	2.5			
5.	Maintain Antivirus Antispam	<p><b><u>Antivirus Antispam:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of antivirus antispam</li> <li>• Why and how to maintain antivirus antispam</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.5	2	2.5			
6.	Maintain Content Filtering	<p><b><u>Content Filtering:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of content filtering</li> <li>• Why and how to maintain content filtering</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.5	2	2.5			
			Total:	3	15	18		
<b>Sub module: 5: Network Trouble Shooting</b>								
	<b>Description:</b> This module consists of the knowledge and skills related to performing network trouble shooting.							
	<b>Objective:</b>							
	<ul style="list-style-type: none"> <li>• To Perform Network Trouble Shooting</li> </ul>							
	<b>Tasks:</b> Each task consists of a task statement and related technical knowledge that must to know in order to be able to carry out that very task.							
	8 hrs. (Th.) + 32 hrs. (Pr.) = 40 hrs. (Tot.)			Time(Hrs.)				
SN	Tasks		Related technical knowledge	Th.	Pr.	Tot.		



1.	Perform Power Testing	<p><b><u>Power Testing:</u></b></p> <ul style="list-style-type: none"> <li>• concept of power testing</li> <li>• Why to perform power testing</li> <li>• How to perform power testing</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3.2	4	
2.	Perform Device Malfunctioning	<p><b><u>Device Malfunctioning:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of device malfunctioning</li> <li>• Why to perform device malfunctioning</li> <li>• How to perform device malfunctioning</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3.2	4	
3.	Perform LAN Card Testing	<p><b><u>LAN Card Testing:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of LAN card testing</li> <li>• Why to perform LAN card testing</li> <li>• How to perform LAN card testing</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3.2	4	
4.	Perform Cable Testing	<p><b><u>Cable Testing:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of cable testing</li> <li>• Why to perform cable testing</li> <li>• How to perform cable testing</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3.2	4	
5.	Perform PING Testing	<p><b><u>PING Testing:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of PING testing</li> <li>• Why to perform PING testing</li> <li>• How to perform PING testing</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3.2	4	
6.	Perform ARP Lookup	<p><b><u>ARP Lookup:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of ARP lookup</li> <li>• Why to perform ARP lookup</li> </ul>	0.8	3.2	4	

			<ul style="list-style-type: none"> <li>• How to perform ARP lookup</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>				
7.	Verify Firewall Presence		<p><b><u>Firewall Presence:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of firewall presence</li> <li>• Why to verify firewall presence</li> <li>• How to verify firewall presence</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3.2	4	
8.	Verify hate way Availability		<p><b><u>Hate way Availability:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of hate way availability</li> <li>• Why to verify hate way availability</li> <li>• How to verify hate way availability</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3.2	4	
9.	Perform Trace Route		<p><b><u>Trace Routing:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of trace route</li> <li>• Why to perform trace route</li> <li>• How to perform trace route</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3.2	4	
10.	Perform DNS Verifying		<p><b><u>DNS Verifying:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of DNS verifying</li> <li>• Why to perform DNS verifying</li> <li>• How to perform DNS verifying</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3.2	4	
			Total:	8	32	40	
<b>Module: 4: Database</b>							
	<b>Description:</b> This module consists of the knowledge and skills related to installing database, designing database, performing programmatic control, managing roles & privileges, maintaining database and performing database troubleshooting.						

	<b>Objectives:</b> <ul style="list-style-type: none"> <li>To Install Database</li> <li>To Design Database</li> <li>To Perform Programmatic Control</li> <li>To Manage Roles &amp; Privileges</li> <li>To Maintain Database</li> <li>To Perform Database Troubleshooting</li> </ul>				
	<b>Sub modules:</b> <ol style="list-style-type: none"> <li>Database Installation</li> <li>Database Designing</li> <li>Programmatic Control</li> <li>Managing Roles &amp; Privileges</li> <li>Maintaining Database</li> <li>Database Troubleshooting</li> </ol>				
	<b>Sub module: 1: Database Installation</b>				
	<b>Description:</b> This module consists of the knowledge and skills related to installing database.				
	<b>Objective:</b> <ul style="list-style-type: none"> <li>To Install Database</li> </ul>				
	<b>Tasks:</b> Each task consists of a task statement and related technical knowledge that must to know in order to be able to carry out that very task.				
	5 hrs. (Th.) + 20 hrs. (Pr.) = 25 hrs. (Tot.)			Time(Hrs.)	
SN	Tasks	Related technical knowledge	Th.	Pr.	Tot.
1.	Install minimum required hardware/software	<u><b>Installation of minimum required hardware/software:</b></u> <ul style="list-style-type: none"> <li>List of minimum required hardware/software</li> <li>Identification of the required hardware/software</li> <li>Procedures for installing each of the required hardware/software</li> <li>Related precautions to be taken</li> <li>Related records to be kept</li> </ul>	1	4	5
2.	Install MS Access	<u><b>Installation of MS Access:</b></u> <ul style="list-style-type: none"> <li>Concept, need and importance of MS Access</li> <li>Functions/uses of MS Access</li> <li>Procedure for installing MS Access</li> <li>Related precautions to be taken</li> <li>Related records to be kept</li> </ul>	1	4	5

3.	Install SQL Server (Structured Query language)	<p><b><u>Installation of SQL Server (Structured Query language):</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of SQL server (structured query language)</li> <li>• Functions/uses of SQL server (structured query language)</li> <li>• Procedure for installing SQL server (structured query language)</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	1	4	5		
4.	Install Database Server Client	<p><b><u>Installation of Database Server Client:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of database server client</li> <li>• Functions/uses of database server client</li> <li>• Procedure for installing database server client</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	1	4	5		
5.	Install /Uninstall Database	<p><b><u>Installing /Uninstalling Database:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of installing /uninstalling database</li> <li>• Why to install /uninstall database</li> <li>• Procedure for installing /uninstalling database</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	1	4	5		
			Total:	5	20	25	
<b>Sub module: 2: Database Designing</b>							
	<b>Description:</b> This module consists of the knowledge and skills related to designing database.						
	<b>Objective:</b>						
	<ul style="list-style-type: none"> <li>• To Design Database</li> </ul>						
	<b>Tasks:</b> Each task consists of a task statement and related technical knowledge that must to know in order to be able to carry out that very task.						

		4 hrs. (Th.) + 20 hrs. (Pr.) = 24 hrs. (Tot.)	Time(Hrs.)		
SN	Tasks	Related technical knowledge	Th.	Pr.	Tot.
1.	Design RDBMS Scalability	<p><b><u>Designing of RDBMS Scalability:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of RDBMS Scalability/ RDBMS Scalability design</li> <li>• How to design RDBMS Scalability</li> <li>• Application of RDBMS Scalability design</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.7	4	4.7
2.	Design Database (Relational, Network Hierarchical, database system)	<p><b><u>Designing of Database (Relational, Network Hierarchical, database system):</u></b></p> <ul style="list-style-type: none"> <li>• Concept of Database /Database Design (Relational, Network Hierarchical, database system)</li> <li>• How to design Database (Relational, Network Hierarchical, database system)</li> <li>• Application of Database (Relational, Network Hierarchical, database system)</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.7	4	4.7
3.	Design Client Server Model	<p><b><u>Designing of Client Server Model:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of Client Server Model/ Client Server Model Design</li> <li>• How to design Client Server Model</li> <li>• Application of Client Server Model Design</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.7	3	3.7

4.	Perform Cardinality	<b><u>Cardinality:</u></b> <ul style="list-style-type: none"> <li>• Concept of Cardinality</li> <li>• How to perform Cardinality</li> <li>• Application of Cardinality</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.7	3	3.7
5.	Perform Normalization	<b><u>Normalization:</u></b> <ul style="list-style-type: none"> <li>• Concept of Normalization</li> <li>• How to perform Normalization</li> <li>• Application of Normalization</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.6	3	3.6
6.	Make Joins(Inner/outer/cross union)	<b><u>Joins(Inner/outer/cross union):</u></b> <ul style="list-style-type: none"> <li>• Concept of Joins(Inner/outer/cross union)</li> <li>• How to make Joins(Inner/outer/cross union)</li> <li>• Application of Joins(Inner/outer/cross union)</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.6	3	3.6
		Total:	4	20	24
<b>Sub module: 3: Programmatic Control</b>					
	<b>Description:</b> This module consists of the knowledge and skills related to performing programmatic control.				
	<b>Objective:</b> <ul style="list-style-type: none"> <li>• To Perform Programmatic Control</li> </ul>				
	<b>Tasks:</b> Each task consists of a task statement and related technical knowledge that must to know in order to be able to carry out that very task.				
	4 hrs. (Th.) + 16 hrs. (Pr.) = 20 hrs. (Tot.)			Time(Hrs.)	
SN	Tasks	Related technical knowledge	Th.	Pr.	Tot.
1.	Perform DML, DDL, TCL, DCL	<b><u>DML, DDL, TCL, DCL:</u></b> <ul style="list-style-type: none"> <li>• Concept of DML, DDL, TCL and DCL</li> <li>• Concept, need and importance of performing DML, DDL, TCL and DCL</li> </ul>	0.8	4	4.8

			<ul style="list-style-type: none"> <li>• Procedure for performing DML, DDL, TCL and DCL</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>				
2.	Perform View	<p><b><u>View:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of view</li> <li>• Concept, need and importance of performing view</li> <li>• Procedure for performing view</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3	3.8		
3.	Perform Trigger	<p><b><u>Trigger:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of trigger</li> <li>• Concept, need and importance of performing trigger</li> <li>• Procedure for performing trigger</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3	3.8		
4.	Perform <b>Store</b> procedure	<p><b><u>Store procedure:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of <b>store</b> procedure</li> <li>• Concept, need and importance of performing <b>store</b> procedure</li> <li>• Procedure for performing <b>store</b> procedure</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3	3.8		
5.	Perform Indexing/Query Optimization	<p><b><u>Indexing/Query Optimization:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of indexing/query optimization</li> <li>• Concept, need and importance of performing indexing/query optimization</li> <li>• Procedure for performing indexing/query optimization</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3	3.8		

			Total:	2	16	20	
<b>Sub module: 4: Managing Roles &amp; Privileges</b>							
<b>Description:</b> This module consists of the knowledge and skills related to managing roles & privileges.							
<b>Objective:</b>							
<ul style="list-style-type: none"> <li>• To Manage Roles &amp; Privileges</li> </ul>							
<b>Tasks:</b> Each task consists of a task statement and related technical knowledge that must to know in order to be able to carry out that very task.							
4 hrs. (Th.) + 16 hrs. (Pr.) = 20 hrs. (Tot.)				Time(Hrs.)			
SN	Tasks	Related technical knowledge	Th.	Pr.	Tot.		
1.	Manage/ Create User	<b><u>Managing /Creating User:</u></b> <ul style="list-style-type: none"> <li>• Concept of user/creating user</li> <li>• Concept, need and importance of managing /creating user</li> <li>• Procedure for managing /creating user</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	4	4.8		
2.	Manage /Define User Role For Database	<b><u>Managing /Defining User Role for Database:</u></b> <ul style="list-style-type: none"> <li>• Concept of user role for database</li> <li>• Concept, need and importance of managing /defining user role for database</li> <li>• Procedure for managing /defining user role for database</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3	3.8		
3.	Manage /Define Privilege to Database User	<b><u>Managing /Defining Privilege to Database User:</u></b> <ul style="list-style-type: none"> <li>• Concept of privilege to database user</li> <li>• Concept, need and importance of managing /defining privilege to database user</li> <li>• Procedure for managing /defining privilege to database user</li> </ul>	0.8	3	3.8		



			<ul style="list-style-type: none"> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>				
4.	Manage Access of Database to Client From Server	<ul style="list-style-type: none"> <li>• Concept of access /database /client / server</li> <li>• Concept, need and importance of managing access of database to client from server</li> <li>• Procedure for managing access of database to client from server</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	<b><u>Managing Access of Database to Client From Server:</u></b>	0.8	3	3.8	
5.	Manage to Delete User	<ul style="list-style-type: none"> <li>• Concept of deleting/ user</li> <li>• Concept, need and importance of deleting user</li> <li>• Procedure for deleting user</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	<b><u>Deleting User:</u></b>	0.8	3	3.8	
			Total:	4	16	20	
<b>Sub module: 5: Maintaining Database</b>							
	<b>Description:</b> This module consists of the knowledge and skills related to maintaining database.						
	<b>Objective:</b>						
	<ul style="list-style-type: none"> <li>• To Maintain Database</li> </ul>						
	<b>Tasks:</b> Each task consists of a task statement and related technical knowledge that must to know in order to be able to carry out that very task.						
	4 hrs. (Th.) + 16 hrs. (Pr.) = 20 hrs. (Tot.)			Time(Hrs.)			
SN	Tasks	Related technical knowledge		Th.	Pr.	Tot.	
1.	Maintain Backup/ Restore	<ul style="list-style-type: none"> <li>• Concept of backup/ restore</li> <li>• Concept, need and importance of maintaining backup/ restore</li> <li>• Procedure for maintaining backup/ restore</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	<b><u>Backup/ Restore:</u></b>	0.8	4	4.8	

2.	Maintain Database Export	<p><b><u>Database Export:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of database export</li> <li>• Concept, need and importance of maintaining database export</li> <li>• Procedure for maintaining database export</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3	3.8	
3.	Maintain Database Import	<p><b><u>Database Import:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of database import</li> <li>• Concept, need and importance of maintaining database import</li> <li>• Procedure for maintaining database import</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3	3.8	
4.	Maintain Job Scheduling	<p><b><u>Job Scheduling:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of job scheduling</li> <li>• Concept, need and importance of maintaining job scheduling</li> <li>• Procedure for maintaining job scheduling</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3	3.8	
5.	Maintain Recovery	<p><b><u>Recovery:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of recovery</li> <li>• Concept, need and importance of maintaining recovery</li> <li>• Procedure for maintaining recovery</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.8	3	3.8	
		Total:	4	16	20	
<b>Sub module: 6: Database Troubleshooting</b>						
	<b>Description:</b> This module consists of the knowledge and skills related to performing database troubleshooting.					
	<b>Objective:</b>					
	<ul style="list-style-type: none"> <li>• To Perform Database Troubleshooting</li> </ul>					

		<b>Tasks:</b> Each task consists of a task statement and related technical knowledge that must to know in order to be able to carry out that very task.				
		6 hrs. (Th.) + 22 hrs. (Pr.) = 28 hrs. (Tot.)	Time(Hrs.)			
SN	Tasks	Related technical knowledge	Th.	Pr.	Tot.	
1.	Perform Service Startup in Server	<u><b>Service Startup in Server:</b></u> <ul style="list-style-type: none"> <li>• Concept of service startup/ server</li> <li>• Concept, need and importance of service startup in server</li> <li>• Procedure for carrying out service startup in server</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	1.0	4	5.0	
2.	Monitor log of job scheduling	<u><b>Monitoring log of job scheduling:</b></u> <ul style="list-style-type: none"> <li>• Concept of monitoring, job scheduling and log of job scheduling</li> <li>• Concept, need and importance of monitoring of log of job scheduling</li> <li>• Procedure for monitoring of log of job scheduling</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	1.0	3	4.0	
3.	Perform access of services by client	<u><b>Access of services by client:</b></u> <ul style="list-style-type: none"> <li>• Concept of access of services/ client</li> <li>• Concept, need and importance of performing access of services by client</li> <li>• Procedure for performing access of services by client</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	1.0	3	4.0	
4.	Perform database performance tuning	<u><b>Database performance tuning:</b></u> <ul style="list-style-type: none"> <li>• Concept of database/ database performance tuning</li> <li>• Concept, need and importance of performing database performance tuning</li> </ul>	1.0	3	4.0	

			<ul style="list-style-type: none"> <li>• Procedure for performing database performance tuning</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>				
5.	Perform user surface area configuration		<p><b><u>User surface area configuration:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of user surface area configuration</li> <li>• Concept, need and importance of performing user surface area configuration</li> <li>• Procedure for performing user surface area configuration</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	1.0	3	4.0	
6.	Perform data transmission services		<p><b><u>Data transmission services:</u></b></p> <ul style="list-style-type: none"> <li>• Concept of data transmission services</li> <li>• Concept, need and importance of performing data transmission services</li> <li>• Procedure for performing data transmission services</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.5	3	3.5	
7.	Perform Transaction conformance (ACID)		<p><b><u>Transaction conformance (ACID):</u></b></p> <ul style="list-style-type: none"> <li>• Concept of transaction conformance (ACID)</li> <li>• Concept, need and importance of performing transaction conformance (ACID)</li> <li>• Procedure for performing transaction conformance (ACID)</li> <li>• Related safety/precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.5	3	3.5	
			Total:	6	22	28	
<b>Module: 5: Communication and Professionalism</b>							

	<b>Description:</b> This module consists of the knowledge and skills related to communication and professionalism development.				
	<b>Objectives:</b> <ul style="list-style-type: none"> <li>To Communicate With Others</li> <li>To Develop Professionalism</li> </ul>				
	<b>Sub modules:</b> <ol style="list-style-type: none"> <li>Communication</li> <li>Professionalism Development</li> </ol>				
	<b>Sub module: 7: Communication</b>				
	<b>Description:</b> This module consists of the knowledge and skills related to communication and professionalism development.				
	<b>Objective:</b> <ul style="list-style-type: none"> <li>To Communicate With Others</li> </ul>				
	<b>Tasks:</b> Each task consists of a task statement and related technical knowledge that must to know in order to be able to carry out that very task.				
	2 hrs. (Th.) + 6 hrs. (Pr.) = 8 hrs. (Tot.)		Time(Hrs.)		
SN	Tasks	Related technical knowledge	Th.	Pr.	Tot.
1.	Communicate with juniors	<b><u>Communicating with juniors:</u></b> <ul style="list-style-type: none"> <li>Concept, need and importance of communication/communicating with juniors</li> <li>Mannerism to deal with the juniors</li> <li>Identification of juniors</li> <li>How to communicate with juniors</li> <li>Related precautions to be taken</li> <li>Related records to be kept</li> </ul>	0.2	0.9	1.1
2.	Communicate with seniors	<b><u>Communicating with seniors:</u></b> <ul style="list-style-type: none"> <li>Concept, need and importance of communicating with seniors</li> <li>Mannerism to deal with the seniors</li> <li>Identification of seniors</li> <li>How to communicate with seniors</li> <li>Related precautions to be taken</li> <li>Related records to be kept</li> </ul>	0.3	0.9	1.2
3.	Communicate with peers	<b><u>Communicating with Peers:</u></b> <ul style="list-style-type: none"> <li>Concept, need and importance of</li> </ul>	0.3	0.9	1.2

			<ul style="list-style-type: none"> <li>communicating with peers</li> <li>• Mannerism to deal with the peers</li> <li>• Identification of peers</li> <li>• How to communicate with peers</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>				
4.	Prepare/Write Simple Proposals/Reports	<p><b><u>Simple Proposals/Reports:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of proposals/reports</li> <li>• Identification of</li> <li>• How to prepare/write simple proposals/reports</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.3	0.9	1.2		
5.	Communicate with Clients	<p><b><u>Communicating with Clients:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of communicating with clients</li> <li>• Mannerism to deal with the clients</li> <li>• Identification of clients</li> <li>• How to communicate with clients</li> <li>• Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.3	0.8	1.1		
6.	Receive Mobile /Telephone Calls	<p><b><u>Receiving Mobile /Telephone Calls:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of receiving mobile /telephone calls</li> <li>• Identification of mobile/telephone</li> <li>• How to receive mobile /telephone calls Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>	0.3	0.8	1.1		
7.	Make Telephone /Mobile calls	<p><b><u>Making Telephone/ Mobile calls:</u></b></p> <ul style="list-style-type: none"> <li>• Concept, need and importance of making</li> </ul>	0.3	0.8	1.1		

			<ul style="list-style-type: none"> <li>mobile /telephone calls</li> <li>• How to make mobile /telephone calls Related precautions to be taken</li> <li>• Related records to be kept</li> </ul>					
			Total:	2	6	8		
<b>Sub module: 8: Professionalism Development</b>								
	<b>Description:</b> This module consists of the knowledge and skills related to communication and professionalism development.							
	<b>Objective:</b>							
	<ul style="list-style-type: none"> <li>To Develop Professionalism</li> </ul>							
	<b>Tasks:</b> Each task consists of a task statement and related technical knowledge that must to know in order to be able to carry out that very task.							
	2 hrs. (Th.) + 8 hrs. (Pr.) = 10 hrs. (Tot.)			Time(Hrs.)				
SN	Tasks		Related technical knowledge	Th.	Pr.	Tot.		
1.	Read/Follow Cyber Law/Electronic Transaction Act -2063		<u><b>Cyber Law/Electronic Transaction Act -2063:</b></u> <ul style="list-style-type: none"> <li>• Cyber law</li> <li>• Electronic Transaction Act - 2063</li> <li>• Need to read/follow Cyber Law/ Electronic Transaction Act-2063</li> <li>• How the Law/Act contribute to professionalism development</li> <li>• Precautions to be taken</li> <li>• Related records keeping</li> </ul>	0.2	0.8	1		
2.	Read/Follow IT Technician Code of ETMICS		<u><b>IT Technician Code of ETMICS:</b></u> <ul style="list-style-type: none"> <li>• IT Technician Code of ETMICS</li> <li>• Need to read/follow IT Technician Code of ETMICS</li> <li>• How it contribute to professionalism development</li> <li>• Precautions to be taken</li> <li>• Related records keeping</li> </ul>	0.2	0.8	1		
3.	Attend Professional Trainings		<u><b>Professional Trainings:</b></u> <ul style="list-style-type: none"> <li>• Concept and importance of professional trainings</li> <li>• Need to attend professional trainings</li> <li>• How to attend professional</li> </ul>	0.2	0.8	1		

			<p>trainings</p> <ul style="list-style-type: none"> <li>• How it contribute to professionalism development</li> <li>• Precautions to be taken</li> <li>• Related records keeping</li> </ul>				
4.	Send/Receive Messages/Information		<p><b><u>Messages/Information:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of messages/information</li> <li>• Need to send/receive messages/information</li> <li>• How to send/receive messages/information</li> <li>• How it contribute to professionalism development</li> <li>• Precautions to be taken</li> <li>• Related records keeping</li> </ul>	0.2	0.8	1	
5.	Write Letters/Memos		<p><b><u>Letters/Memos:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of letters/memos</li> <li>• Need to write letters/memos</li> <li>• Identification of letters/memos</li> <li>• How to write letters/memos</li> <li>• How it contribute to professionalism development</li> <li>• Precautions to be taken</li> <li>• Related records keeping</li> </ul>	0.2	0.8	1	
6.	Attend Workshops/Seminars/Meetings		<p><b><u>Workshops/Seminars/Meetings</u></b> :</p> <ul style="list-style-type: none"> <li>• Concept and importance of professional workshops/seminars/meetings</li> <li>• Need to attend workshops/seminars/meetings</li> <li>• How to attend professional workshops/seminars/meetings</li> <li>• How it contribute to professionalism development</li> <li>• Precautions to be taken</li> <li>• Related records keeping</li> </ul>	0.2	0.8	1	
7.	Seek for/Gain Higher Education		<p><b><u>Higher Education:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of higher education</li> </ul>	0.2	0.8	1	



			<ul style="list-style-type: none"> <li>• Need to seek for/gain higher education</li> <li>• How it contribute to professionalism development</li> <li>• Precautions to be taken</li> <li>• Related records keeping</li> </ul>				
8.	Follow Professional Ethics		<p><b><u>Professional Ethics:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of professional ethics/following professional ethics</li> <li>• Need to follow professional ethics</li> <li>• How it contribute to professionalism development</li> <li>• Precautions to be taken</li> <li>• Related records keeping</li> </ul>	0.2	0.8	1	
9.	From Professional Organization		<p><b><u>Professional Organization:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of professional organization/forming professional organization</li> <li>• Need to from professional organization</li> <li>• How to from professional organization</li> <li>• How it contribute to professionalism development</li> <li>• Precautions to be taken</li> <li>• Related records keeping</li> </ul>	0.2	0.8	1	
10.	Read Professional Books/Manuals/Journals/Magazines		<p><b><u>Professional Books/Manuals/Journals/Magazines:</u></b></p> <ul style="list-style-type: none"> <li>• Concept and importance of professional books/manuals/journals/magazines</li> <li>• Identification of professional books/manuals/journals/magazines</li> <li>• Need to read professional books/manuals/journals/magazines</li> <li>• How they contribute to professionalism development</li> <li>• Precautions to be taken</li> <li>• Related records keeping</li> </ul>	0.2	0.8	1	

				Total:	2	8	10	
				All total:	77	313	390	

## **Reading materials**

- Instructor selected related text books, reference books and manuals available in the market
- Instructor prepared related books and manuals
- Instructor developed/prepared notes/ handouts
- Internet search

## **List of tools/equipment**

### **Hardware Tools**

- Flat Screw Driver (-)
- Cross Screw Driver (+)
- Pliers
- Drill Machine
- Multimeter
- Network Tester
- Modular Jack
- Patch Panel
- Punch Down Tool
- RJ 11
- RJ 45
- Clamper
- Network Cables (Cat-5/Cat 6)
- Console Cable
- Hub/Switch
- Router

### **Software Tools**

- PING
- TELENET
- SSH
- SQL Server (Structured Query language)
- Nagios
- MRTG

## **Physical Facilities**

- Classroom (Spacious)
- Well equipped workshop
- Principal's room
- Admin/Account room
- Reception room
- Trainers' room
- Still and Video Camera
- A/V room
- Vehicle
- Canteen
- Hostel
- OHP
- Multimedia projector
- Computer
- Lap top
- Photocopier
- Scanner
- Printer
- Internet facilities
- Fax

## ANNEXES

### ANNEX-1

#### List of modules, sub modules, objectives and tasks

#### Module: 1: Networking and Database Basics (8 +32 =40 hrs)/

##### Objective:

- To be familiar with the analysis / identification of basic electric circuits
- To be familiar with logic circuits / gates
- To be familiar with basic electronics concepts
- To be familiar with network fundamentals / its advantages
- To be familiar with database fundamentals

##### Tasks:

##### Electric Circuits

1. State Ohm's law
2. Explain the concept of AC and DC
3. Describe electrical devices (Switch, Capacitor, Resistor, Transformer, LED, Fuse and Battery)
4. Analyses Simple Electric circuit

##### Digital Fundamentals

5. Explain the concept of digital/ analog circuits
6. State logic gates (AND, OR and NOT)
7. Differentiate the concept of Truth Table and Boolean algebra

##### Electronics Devices and Circuit

8. State the concept of Integrated Chips
9. State the concept of MOS
10. State the concept of BIOS

##### Networking Fundamentals

11. Introduce Computer Network
12. State the concept of Internet/ Web Browser/ Website
13. Enlist the advantage of network computer over the stand alone
14. Differentiate between client and server model
15. State the concept of Network Operating System

##### Database Fundamentals

16. Explain the concept of Database and its advantages over file system
17. Discuss database environment and development process

#### Module: 2: Computer Hardware and Operating Systems [(13 +48 =61 hrs) / (5+20=25 Marks)]

##### Objectives:

- To Maintain Computer Hardware
- To Run Operating Systems
- To Handle Hardware Tools
- To Handle Software Tools

**Sub module: 1: Computer Hardware (6 +26 =32 hrs)**

**Objective:**

- To Maintain Computer Hardware

**Tasks:**

1. Maintain motherboard
2. Maintain ROM/CD-ROM
3. Maintain CACHE
4. Maintain Memory /RAM
5. Maintain CPU
6. Maintain ATX-Power
7. Maintain supply UPS/ Keyboard
8. Maintain mouse
9. Maintain BUS
10. Maintain Serial BUS
11. Maintain Parallel BUS
12. Maintain PCI slot
13. Maintain expansion slot
14. Maintain Networking Device
15. Maintain LAN-Card
16. Maintain NIC-Card
17. Maintain Ethernet
18. Maintain USB

**Sub module: 2: Operating Systems [(3 +12 =15 hrs)/ (5+20=25 Marks)]**

**Objective:**

- To Run Operating Systems

**Tasks:**

1. Run/Install window XP
2. Run/Install Window 7/Linux
3. Manage file / folder
4. Install Software
5. Uninstall S/W
6. Manage Device / Drivers
7. Manage/Setup IP address DNS

**Sub module: 3: Hardware Tools (2 +6 =8 hrs)**

**Objective:**

- To Handle Hardware Tools

**Tasks:**

1. Handle Flat Screw Driver (-)
2. Handle Cross Screw Driver (+)
3. Handle Pliers
4. Handle Drill Machine
5. Handle Multimeter
6. Handle Network Tester

7. Handle Modular Jack
8. Handle Patch Panel
9. Handle Punch down Tool
10. Handle RJ 11
11. Handle RJ 45
12. Handle Clamper
13. Handle Network Cables (Cat-5/Cat 6)
14. Handle Console Cable
15. Handle Hub/Switch
16. Handle Router

**Sub module: 4: Software Tools (2 +4 =6 hrs)**

**Objective:**

- To Handle Software Tools

**Tasks:**

1. Handle PING
2. Handle TELENET
3. Handle SSH
4. Handle SQL Server (Structured Query language)
5. Handle Nagios
6. Handle MRTG

**Module: 3: Networking [(25 +109 =134 hrs)/ (25+100=125 Marks)]**

**Objectives:**

- To Analyze/design Networks
- To Setup/Install Networks
- To Operate/Maintain Networks
- To Maintain Network Security
- To Perform Network Trouble Shooting

**Sub module: 1: Networks analysis/Designing (86+27 =33 hrs)**

**Objective:**

- To Analyze/design Networks

**Tasks:**

1. Analyze Size of Network
2. Analyze Type of Network [Wired(LAN/MAN/WAN) & Wireless(LAN/MAN/WAN)]
3. Design Network Topology(Star/Ring/Bus)
4. Design Network Standard (OSI)
5. Design Network Standard(TCP/IP)
6. Design Using Simulator (Packet Tracer)//cisco
7. Analyze Switching Technique
8. Design IP Addressing (Static IP /Dynamic IP)
9. Analyze Static Routing
10. Analyze Dynamic Routing
11. Analyze Network Bandwidth Requirement



## **Sub module: 2: Networks Setup/Installation (5 +20 =25 hrs)**

### **Objective:**

- To Setup/Install Networks

### **Tasks:**

1. Setup/Install Clamping
2. Setup/Install Cabling Straight through crossover
3. Setup/Install DHCP Manual /IP Configuration
4. Setup/Install DNS
5. Setup Network Wizard

## **Sub module: 3: Networks Operation/Maintenance (3 +15 =18 hrs)**

### **Objective:**

- To Operate/Maintain Networks

### **Tasks:**

1. Operate/maintain File/Folder sharing
2. Operate/Maintain Printer Sharing
3. Operate/Maintain Scanner Sharing
4. Operate/maintain FTP (File transfer protocol)
5. Operate/Maintain E-mail
6. Operate/Maintain Storage Device Sharing (Drive/CD Rom)

## **Sub module: 4: Network Security (3 +15 =18 hrs)**

### **Objective:**

- To Maintain Network Security

### **Tasks:**

1. Maintain IP Filtering
2. Maintain MAC Address Binding
3. Maintain Authentication Login Credentials
4. Maintain URL Filtering
5. Maintain Antivirus Antispam
6. Maintain Content Filtering

## **Sub module: 5: Network Trouble Shooting (8 +32 =40 hrs)**

### **Objective:**

- To Perform Network Trouble Shooting

### **Tasks:**

1. Perform Power Testing
2. Perform Device Malfunctioning
3. Perform LAN Card Testing
4. Perform Cable Testing
5. Perform PING Testing
6. Perform ARP Lookup
7. Verify Firewall Presence
8. Verify hate way Availability

9. Perform Trace Route
10. Perform DNS Verifying

**Module: 4: Database [(27 +110 =137 hrs) / (25+100=125 Marks)]**

**Objectives:**

- To Install Database
- To Design Database
- To Perform Programmatic Control
- To Manage Roles & Privileges
- To Maintain Database
- To Perform Database Troubleshooting

**Sub module: 1: Database Installation (5 +20 =25 hrs)**

**Objective:**

- To Install Database

**Tasks:**

1. Install minimum required hardware/software
2. Install MS Access
3. Install SQL Server (Structured Query language)
4. Install Database Server Client
5. Install /Uninstall Database

**Sub module: 2: Database Designing (4 +20 =24 hrs)**

**Objective:**

- To Design Database

**Tasks:**

1. Design RDBMS Scalability
2. Design Database (Relational, Network Hierarchical, database system)
3. Design Client Server Model
4. Perform Cardinality
5. Perform Normalization
6. Perform Joins(Inner/outer/cross union)

**Sub module: 3: Programmatic Control (4 +16 =20 hrs)**

**Objective:**

- To Perform Programmatic Control

**Tasks:**

1. Perform DML, DDL, TCL, DCL
2. Perform View
3. Perform Trigger
4. Perform Stare procedure
5. Perform Indexing/Query Optimization

**Sub module: 4: Managing Roles & Privileges (4 +16 =20 hrs)**

**Objective:**

- To Manage Roles & Privileges

**Tasks:**

1. Manage Create User
2. Manage Define User Role for database
3. Manage Define Privilege to database user
4. Manage Access of database to client from server
5. Manage Delete user

**Sub module: 5: Maintaining Database (4 +16 =20 hrs)**

**Objective:**

- To Maintain Database

**Tasks:**

1. Maintain Backup/ Restore
2. Maintain Database Export
3. Maintain Database Import
4. Maintain Job Scheduling
5. Maintain Recovery

**Sub module: 6: Database Troubleshooting (4 +22 =28 hrs)**

**Objective:**

- To Perform Database Troubleshooting

**Tasks:**

1. Perform Service Startup in Server
2. Monitor log of job scheduling
3. Perform access of services by client
4. Perform database performance tuning
5. Perform user surface area configuration
6. Perform data transmission services
7. Perform Transaction conformance (ACID)

**Module: 5: Communication and Professionalism (4 +14 =18 hrs) / 2+8=10 Marks**

**Objectives:**

- To Communicate With Others
- To Develop Professionalism

**Sub module: 7: Communication (2 +6 =8 hrs)**

**Objective:**

- To Communicate With Others

**Tasks:**

1. Communicate with juniors
2. Communicate with seniors
3. Communicate with Peers
4. Prepare/Write Simple Proposals/Reports

5. Communicate with Clients
6. Receive Mobile Telephone Calls
7. Make Telephone calls/Mobile

**Sub module: 8: Professionalism Development (2 +8 =10 hrs)**

**Objective:**

- To Develop Professionalism

**Tasks:**

1. Read/Follow Cyber Law/Electronic Transaction Act -2063
2. Read/Follow IT Technician Code of ETMICS
3. Attend Professional Trainings
4. Send/Receive Messages/Information
5. Write Letters/Memos
6. Attend Workshops/Seminars/Meetings
7. Seek for/Gain Higher Education
8. Follow Professional Ethics
9. From Professional Organization
10. Read Professional Books/Manuals/Journals/Magazines

## ANNEX-2

### List of duties and tasks (From job analysis)

#### **Duty: A. Maintain Computer Hardware (18)**

##### **Tasks:**

1. Maintain motherboard
2. Maintain ROM/CD-ROM
3. Maintain CACHE
4. Maintain Memory/ RAM
5. Maintain CPU
6. Maintain ATX-Power
7. Maintain supply UPS /Keyboard
8. Maintain mouse
9. Maintain BUS
10. Maintain Serial BUS
11. Maintain Parallel BUS
12. Maintain PCI slot
13. Maintain expansion slot
14. Maintain Networking Device
15. Maintain LAN-Card
16. Maintain NIC-Card
17. Maintain Ethernet
18. Maintain USB

#### **Duty: B. Run Operating Systems (7)**

##### **Tasks:**

1. Run/Install window XP
2. Run/Install Window 7/Linux
3. Manage file / folder
4. Install Software
5. Uninstall S/W
6. Manage Device / Drivers
7. Manage/Setup IP address DNS

#### **Duty: C Handle Hardware Tools (16)**

##### **Tasks:**

1. Handle Flat Screw Driver (-)
2. Handle Cross Screw Driver (+)
3. Handle Pliers
4. Handle Drill Machine
5. Handle Multimeter
6. Handle Network Tester
7. Handle Modular Jack

8. Handle Patch Panel
9. Handle Punch down Tool
10. Handle RJ 11
11. Handle RJ 45
12. Handle Clamper
13. Handle Network Cables (Cat-5/Cat 6)
14. Handle Console Cable
15. Handle Hub/Switch
16. Handle Router

**Duty: D. Handle Software Tools (6)**

**Tasks:**

1. Handle PING
2. Handle TELENET
3. Handle SSH
4. Handle SQL Server (Structured Query language)
5. Handle Nagios
6. Handle MRTG

**Duty: E. Analyze/design Networks (11)**

**Tasks:**

1. Analyze Size of Network
2. Analyze Type of Network [Wired(LAN/MAN/WAN) & Wireless(LAN/MAN/WAN)]
3. Design Network Topology(Star/Ring/Bus)
4. Design Network Standard (OSI)
5. Design Network Standard(TCP/IP)
6. Design Using Simulator (Packet Tracer)//cisco
7. Analyze Switching Technique
8. Design IP Addressing (Static IP/ Dynamic IP)
9. Analyze Static Routing
10. Analyze Dynamic Routing
11. Analyze Network Bandwidth Requirement

**Duty: F. Setup/Install Networks (5)**

**Tasks:**

1. Setup/Install Clamping
2. Setup/Install Cabling Straight through crossover
3. Setup/Install DHCP Manual/ IP Configuration
4. Setup/Install DNS
5. Setup Network Wizard

**Duty: G. Operate/Maintain Networks (6)**

**Tasks:**

1. Operate/maintain File/Folder sharing
2. Operate/Maintain Printer Sharing
3. Operate/Maintain Scanner Sharing
4. Operate/maintain FTP (File transfer protocol)

5. Operate/Maintain E-mail
6. Operate/Maintain Storage Device Sharing (Drive/CD Rom)

**Duty: H. Maintain Network Security (6)**

**Tasks:**

1. Maintain IP Filtering
2. Maintain MAC Address Binding
3. Maintain Authentication Login Credentials
4. Maintain URL Filtering
5. Maintain Antivirus Antispam
6. Maintain Content Filtering

**Duty: I. Perform Network Trouble Shooting (10)**

**Tasks:**

1. Perform Power Testing
2. Perform Device Malfunctioning
3. Perform LAN Card Testing
4. Perform Cable Testing
5. Perform PING Testing
6. Perform ARP Lookup
7. Verify Firewall Presence
8. Verify hate way Availability
9. Perform Trace Route
10. Perform DNS Verifying

**Duty: J. Install Database (5)**

**Tasks:**

1. Install minimum required hardware/software
2. Install MS Access
3. Install SQL Server (Structured Query language)
4. Install Database Server Client
5. Install/ Uninstall Database

**Duty: K. Design Database (6)**

**Tasks:**

1. Design RDBMS Scalability
2. Design Database (Relational, Network Hierarchical, database system)
3. Design Client Server Model
4. Perform Cardinality
5. Perform Normalization
6. Perform Joins (Inner/outer/cross union)

**Duty: L. Perform Programmatic Control (5)**

**Tasks:**

1. Perform DML, DDL, TCL, DCL
2. Perform View
3. Perform Trigger

4. Perform Stare procedure
5. Perform Indexing/Query Optimization

**Duty: M. Manage Roles & Privileges (5)**

**Tasks:**

1. Manage Create User
2. Manage Define User Role for database
3. Manage Define Privilege to database user
4. Manage Access of database to client from server
5. Manage Delete user

**Duty: N. Maintain Database (5)**

**Tasks:**

1. Maintain Backup/ Restore
2. Maintain Database Export
3. Maintain Database Import
4. Maintain Job Scheduling
5. Maintain Recovery

**Duty: O. Perform Troubleshooting (7)**

**Tasks:**

1. Perform Service Startup in Server
2. Monitor log of job scheduling
3. Perform access of services by client
4. Perform database performance tuning
5. Perform user surface area configuration
6. Perform data transmission services
7. Perform Transaction conformance (ACID)

**Duty: P. Develop Professionalism (10)**

**Tasks:**

1. Read/Follow Cyber Law/Electronic Transaction Act -2063
2. Read/Follow IT Technician Code of ETMICS
3. Attend Professional Trainings
4. Send/Receive Messages/Information
5. Write Letters/Memos
6. Attend Workshops/Seminars/Meetings
7. Seek for/Gain Higher Education
8. Follow Professional Ethics
9. From Professional Organization
10. Read Professional Books/Manuals/Journals/Magazines

**Duty: Q. Communicate With Others (7)**

**Tasks:**

1. Communicate with juniors
2. Communicate with seniors



3. Communicate with Peers
4. Prepare/Write Simple Proposals/Reports
5. Communicate with Clients
6. Receive Mobile Telephone Calls
7. Make Telephone calls/Mobile

ANNEX-3  
Related job profile

**DACUM Job Analysis**  
**of**  
**Database Networking Technician**

**December, 2011**



Council for Technical Education and Vocational Training (CTEVT)  
**Curriculum Development Division**  
Sanothimi, Bhaktapur

## DUTIES and TASKS

### A. Maintain Computer Hardware

A1. Maintain Hardware Equipment motherboard	A2. Maintain Computer Hardware ROM/CD-ROM	A3. Maintain CACHE	A4. Maintain Memory RAM	A5. Maintain CPU	A6. Maintain ATX-Power
A7. Maintain UPS /Keyboard	A8. Maintain mouse, I/O	A9. Maintain BUS	A10. Maintain Serial BUS	A11. Maintain Parallel BUS	A12. Maintain PCI slot
A13. Maintain expansion slot	A14. Maintain Networking Device	A15. Maintain LAN-Card	A16. Maintain NIC-Card	A17. Maintain Ethernet	A18. Maintain USB

### B. Run Operating Systems

B1. Run/Install window XP	B2. Run/Install Window 7/linux	B3. Manage file & folder	B4. Install Software	B5. Uninstall S/W	B6. Manage Device & Drivers
B7. Manage/Setup IP address DNS					

### C Handle Hardware Tools

C1. Handle Flat Screw Driver (-)	C2. Handle Cross Screw Driver (+)	C3. Handle Pliers	C4. Handle Drill Machine	C5. Handle Multimeter	C6. Handle Network Tester
C7. Handle Modular Jack	C8. Handle Patch Panel	C9. Handle Punch Down Tool	C10. Handle RJ 11	C11. Handle RJ 45	C12. Handle Clamper
C13. Handle Netwok Cables (Cat-5/Cat 6)	C14. Handle Console Cable	C15. Handle Hub/Switch	C16. Handle Router		

### D. Handle Software Tools

D1. Handle PING	D2. Handle TELENET	D3. Handle SSH	D4. Handle SQL Server (Structured Query language)	D5. Handle Nagios	D6. Handle MRTG
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### E. Analyze/design Networks

E1. Analyze Size of Network	E2. Analyze Type of Network [Wired(LAN/MAN/WAN)& Wireless(LAN/MAN/WAN)]	E3. Design Network Topology(Star/ Ring/Bus)	E4. Design Network Standard (OSI)	E5. Design Network Stancard(TCP/IP)	E6. Design Using Simulator (Packet Tracer)//cisco
E7. Analyzeing Switching Technique	E8. Design IP Addressing (Static IP /Dynamic IP)	E9. Analyze Static Routing	E10. Analyze Dynamic Routing	E11. Analyze Network Bandwidth Requirement	

### F. Setup/Install Networks

F1. Setup/Install Clamping	F2. Setup/Install Cabling Straight through crossover	F3. Setup/Install DHCP Manual /IP Config.	F4. Setup/Install DNS	F5. Setup Network Wizard
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### G. Operate/Maintain Networks

G1. Operate/maintain File/Folder sharing	G2. Operate/Maintain Printer Sharing	G3. Operate/Maintain Scanner Sharing	G4. Operate/maintain FTP (File transfer protocol)	G5. Operate/Maintain E-mail	G6. Operate/Maintain Storage Device Sharing (Drive/CD Rom)
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### H. Maintain Network Security

H1. Maintain IP Filtering	H2. Maintain MAC Address Binding	H3. Maintain Authentication Login Credentials	H4. Maintain URL Filtering	H5. Maintain Antivirus Antispam	H6. Maintain Content Filtering
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### I. Perform Network Trouble Shooting

I1. Perform Power Testing	I2. Perform Device Malfunctioning	I3. Perform LAN Card Testing	I4. Perform Cable Testing	I5. Perform PING Testing	I6. Perform ARP Lookup
I7. Verify Firewall Presence	I8. Verify hate way Availability	I9. Perform Trace Route	I10. Perform DNS Verifying		

### J. Install Database

J1. Install minimum required hardware/software	J2. Install MS Access	J3. Install SQL Server (Structured Query language)	J4. Install Database Server Client	J5. Install /Uninstall Database
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### K. Design Database

K1. Design RDBMS Scalability	K2. Design Database (Relational, Network Hierarchical, database system)	K3. Design Client Server Model	K4. Perform Cardinality	K5. Perform Normalization	K6. Perform Joins(Inner/outer/cross union)
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### L. Perform Programmatic Control

L1. Perform DML, DDL, TCL, DCL	L2. Perform View	L3. Perform Trigger	L4. Perform Store procedure	L5. Perform Indexing/Query Optimization
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### M. Manage Roles & Privileges

M 1. Manage Create User	M 2. Manage Define User Role for database	M 3. Manage Define Privilage to database user	M 4. Manage Access of database to client from server	M 5. Manage Delete user
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### N. Maintain Database

N1. Maintain Backup/Restore	N2. Maintain Database Export	N3. Maintain Database Import	N4. Maintain Job Scheduling	N5. Maintain Recovery	
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### O. Perform Troubleshooting

O1. Perform Service Startup in Server	O2. Monitor log of job scheduling	O3. Perform access of services by client	O4. Perform database performance tuning	O5. Perform user surface area configuration	O6. Perform data transmission services
O7. Perform Transaction conformance (ACID)					

**P. Develop Professionalism**

P1. Read/Follow Cyber Law/Electronic Transaction Act -2063	P2. Read/Follow IT Technician Code of ETMICS	P3. Attend Professional Trainings	P4. Send/Receive Messages/Information	P5. Write Letters/Memos	P6. Attend Workshops/Seminars/Meetings
P7. Seek for/Gain Higher Education	P8. Follow Professional Ethics	P9. From Professional Organization	P10. Read Professional Books/Manuals/Journals/Magazines		

**Q. Communicate With Others**

Q1. Communicate with Juniors	Q2. Communicate with Seniors	Q3. Communicate with Peers	Q4. Prepare/Write Simple Proposals/Reports	Q5. Communicate with Clients	Q6. Receive Mobile Telephone Calls
Q7. Make Telephone calls/Mobile					

### Additional Information of "Database Networking Technician"

<p><b>Workers' traits:</b></p> <ul style="list-style-type: none"> <li>• Honest</li> <li>• Responsible</li> <li>• Polite</li> <li>• Pressure handling</li> <li>• Laborious</li> <li>• Sincere</li> <li>• Dedicated</li> <li>• Punctual</li> <li>• Dynamic</li> <li>• Creative</li> <li>• Innovative</li> <li>• Friendly</li> <li>• Accountable</li> </ul>	<p><b>Entry requirement:</b></p> <ul style="list-style-type: none"> <li>• SLC Pass</li> <li>• Physically and mentally fit</li> <li>• 14 or above</li> </ul> <p><b>Duration:</b></p> <ul style="list-style-type: none"> <li>• 6 months with practical exposure</li> </ul>	<p><b>Carrier path:</b></p> <ul style="list-style-type: none"> <li>• Database administration</li> <li>• Network administration</li> </ul> <p><b>Future Concerns:</b> Bright Future</p>
<p><b>Related Technical Knowledge</b></p>		<p><b>Tools and equipment</b></p>
<p><b>Roles and Privileges:</b></p> <ul style="list-style-type: none"> <li>• Authority and authentication</li> </ul> <p><b>Network Troubleshooting:</b></p> <ul style="list-style-type: none"> <li>• Technique of troubleshooting</li> </ul> <p><b>Database Troubleshooting:</b></p> <ul style="list-style-type: none"> <li>• Troubleshooting Technique</li> </ul> <p><b>Database Installation:</b></p> <ul style="list-style-type: none"> <li>• Concept of database</li> <li>• Type of database</li> <li>• Architecture</li> <li>• Query language</li> </ul> <p><b>Database Design:</b></p> <ul style="list-style-type: none"> <li>• Concept of client server Model</li> <li>• Concept of RDBMS</li> <li>• Concept of Joins</li> </ul> <p><b>Concept of Computer Hardware:</b></p> <ul style="list-style-type: none"> <li>• Hardware device</li> <li>• Memory</li> <li>• I/O device</li> <li>• Network device</li> <li>• BUS</li> </ul> <p><b>Concept of Software:</b></p> <ul style="list-style-type: none"> <li>• Types of software</li> <li>• System software(Operating system)</li> <li>• Application software</li> <li>• Utility software</li> </ul>	<p><b>Professionalism:</b></p> <ul style="list-style-type: none"> <li>• Professional ethic and codes of conduct</li> <li>• Trainings</li> </ul> <p><b>Programmatic Control:</b></p> <ul style="list-style-type: none"> <li>• Concept on data Manipulation language</li> <li>• Data definition language</li> </ul> <p><b>Database Maintenance:</b></p> <ul style="list-style-type: none"> <li>• Recovery, Backup</li> <li>• Uses of Different software's</li> </ul> <p><b>Network Design:</b> Concept, Types, topology, standards (OSI, TCP/IP) Protocol, IP addressing, Switching Technique, Routing Technique</p> <p><b>Network Setup:</b> DHCP, DNS, Cabling concept</p> <p><b>Network Security:</b> Authentication, Authorization and Security</p> <p><b>Network Operating:</b></p> <ul style="list-style-type: none"> <li>• Resource Sharing Printer, scanner, storage devices services</li> </ul> <p><b>Hardware Tools:</b></p> <ul style="list-style-type: none"> <li>• Identification of hardware tools</li> <li>• Function of different tools</li> </ul> <p><b>Software Tools:</b></p> <ul style="list-style-type: none"> <li>• Identification/description of software</li> </ul> <p><b>Communication:</b></p> <ul style="list-style-type: none"> <li>• Means of communication</li> </ul>	<p><b>Hardware Tools</b></p> <ul style="list-style-type: none"> <li>• Flat Screw Driver (-)</li> <li>• Cross Screw Driver (+)</li> <li>• Pliers</li> <li>• Drill Machine</li> <li>• Multimeter</li> <li>• Network Tester</li> <li>• Modular Jack</li> <li>• Patch Panel</li> <li>• Punch Down Tool</li> <li>• RJ 11</li> <li>• RJ 45</li> <li>• Clamper</li> <li>• Network Cables (Cat-5/Cat 6)</li> <li>• Console Cable</li> <li>• Hub/Switch</li> <li>• Router</li> </ul> <p><b>Software Tools</b></p> <ul style="list-style-type: none"> <li>• PING</li> <li>• TELENET</li> <li>• SSH</li> <li>• SQL Server (Structured Query language)</li> <li>• Nagios</li> <li>• MRTG</li> </ul>