

**Information and Communication  
Technology**

**National Vocational Qualification**

**Level 4 – Curriculum**

**By**

**ICT Industry Skills Council**

## Course synopsis - ICT NVQ Level 4

Today, ICT skills have become critical in computerized office environments, automated daily personnel/business activities and reporting systems. This course is designed to provide advanced skills in ICT to prospective student in any type of working environment from large corporates to small companies.

This course is aimed at producing competent ICT professional supporting corporate hardware and peripherals while providing efficient service to design, implement and maintain IT Infrastructure and business processes. Maintenance of corporate network and peripherals is looked after and assisting Office users with system and application software is a vital job for him/her. As more and more devices are connected to internet today to communicate with each other, making use of internet services for business efficiency and securing office IT environment is a vital aspect of this person.

Today IT users are in geographically dispersed areas and therefor assisting users on mobile devices is a requirement and guiding corporate users with data management is crucial to protect the data. This person intends to know about use of office productivity tools such as office suite including word processing, spreadsheet, presentation software etc.

<b>Course Title</b>	<b>Course Duration</b>
Information and Communication Technology NVQ Level 4	Institutional Training - 680 hrs + On the Job Training- 6 months
<b>Objectives of the course</b>	
This course intends to develop an ICT professional at NVQ 4, certificate level, who could support IT infrastructure development and maintenance with expertise in managing application software at corporate and small scale environments. Use of internet services and troubleshooting software, hardware with security at different layers and levels are aimed to develop through this course. User support for hardware, software applications and data management issues are to be inculcated during the course.	
<b>Competence-based modules to be covered:</b>	
<ol style="list-style-type: none"><li>1. Supporting Corporate Hardware and Peripherals</li><li>2. Administering IT Infrastructure and Business Process</li><li>3. Supporting Corporate Network and Peripherals</li><li>4. Assisting Office Users with System and Application Software</li><li>5. Making Use of Internet Services for Business Efficiency</li><li>6. Securing Office IT Environment</li><li>7. Assisting Users on Mobile Devices</li><li>8. Guiding Corporate Users with Data Management</li><li>9. Power Use of Office Productivity Tools</li><li>10. Career Skills -2</li></ol>	

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# 1. Supporting Corporate Hardware and Peripherals

<b>Module Title and Code:</b>	<b>Module: Supporting corporate hardware and peripherals</b>
	<b>Time Frame: 70 hours</b>
<b>Reference to NCS:</b>	Refer Competency Profile of Sector Skills Council
<b>Competencies (job functions and soft skills) and descriptions:</b>	
<p>Trainee handles computer hardware &amp; troubleshoots basic errors in hardware equipment such as Printers, Scanners, Wireless Access Points and Monitors.</p> <p>They identify the difference among servers, client PCs, and workstations and recommends hardware requirement for the specified software packages. (Eg. Graphic Designer Computer Hardware Requirement)</p> <p>Trainees carry out Preventive maintenance to protect hardware peripherals, printers, laptops and identify faults before they occur. Most of errors can be identified beforehand and trainees are aware of early signs</p> <p>They test and evaluate new technologies as a key responsibility of support staff. They are up-to-date with trending technologies.</p> <p>As the technologies are rapidly changing, trainees have a habit of scanning for new technologies and adapt to them as they emerge.</p>	
<b>Typical related work situations to master:</b>	
<ol style="list-style-type: none"><li>(1) Office users don't know what DBMS to purchase, they need to do a task but not aware of the commercial DBMS</li><li>(2) Office users must know how to back up their work files to the secure storage.</li><li>(3) Hardware error occurs and needs assistance to troubleshoot in critical situations</li><li>(4) Disaster occurs and need recover the data stored in the devices</li></ol>	

<b>Important pertinent Content: (knowledge)</b>	<ul style="list-style-type: none"> <li>- Identify Computer types and usage</li> <li>- Identify hardware requirements for the specified software</li> <li>- Using Backup Storage</li> <li>- Troubleshoot mechanical parts of printers and scanners.</li> </ul>
<b>Potentially useful teaching methods: (optional)</b>	<p>e. g.</p> <ul style="list-style-type: none"> <li>- Students must participate in Hands on Lab session to identify hardware components and usage.</li> <li>- Assigning group projects(assembling computer)</li> <li>- Students need to be updated regularly through internet. Guide them how to get updated and introduce tech websites that provide technical knowledge.</li> <li>- Ask the students to do a market research about computer peripherals prices using internet or visiting the market.</li> <li>- Final examination will be 50% will be practical lab test then other 50% will be MCQ basis.</li> </ul>

<b>Competency Area</b>	<b>Competency</b>
<b>Hardware Support</b>	<ul style="list-style-type: none"> <li>– Troubleshoot the peripherals E.g.: printers, access points, scanners. Projectors...etc.</li> <li>– Assess the requirement of hardware items and recommend for purchase</li> <li>– Install of common office hardware and peripherals</li> <li>– Assemble a basic computer</li> <li>– Recommend suitable hardware configuration for different users</li> </ul>

## 2. Administering IT Infrastructure and Business Process

<b>Module Title and Code:</b>	<b>Module: Administering IT infrastructure and business process</b>
	<b>Time Frame: 60 Hours</b>
<b>Reference to NCS:</b>	See Competency Profile of Sector Skills Council
<p><b>Competencies (job functions and soft skills) and descriptions:</b></p> <p>Trainees recognize the terms and conditions of Service Level Agreements (SLA) and interpret them accordingly. Moreover they provide assistance in getting the services from service providers.</p> <p>Trainees engage with the industry to find correct resources.</p> <p>They identify the required specifications and recommend appropriate equipment. Further they perform quality checks on delivery of purchases.</p> <p>Trainees build, maintain and monitor the IT related asset registry.</p> <p>Trainees identify different types of maintenance such as Scheduled Maintenance, Preventive Maintenance and Run to Breakdown Maintenance. They recommend the Scheduled Maintenance referring the guidance provided by the manufacturer or supplier. Further they execute maintenance to ensure reliability and efficiency of office equipment.</p> <p>Trainees record and update service, incident, and support requests in the life cycle support system. They engage effectively and efficiently in providing support through life cycle support systems.</p> <p>Trainees engage in providing remote support to users. They provide help by operating end-user terminals remotely through appropriate tools.</p> <p>They assist others in scheduling and resource booking using appropriate software tools. Further they identify the resources which can be reserved remotely in office environment.</p> <p>Trainees maintain documentation on configuration, deployment, and maintenance of supported technology.</p>	

**Typical related work situations to master:**

1. Company has a service level agreement for telecommunications including internet, video conferencing and office internal telephone system. Sudden issue is detected and IT Support person is asked to sort-out the issues. IT support person has to get the help of the service provider.
2. Company needs new IT equipment. Suggest and recommend specification for equipment for the office.
3. IT support person is requested to perform quality checks on delivery of purchases.
4. Mean Time Between Failures (MTBF) of office IT equipment is getting low. IT support is asked to come up with a solution
5. Office staff satisfaction for the services they receive from support staff is low. Support staff decides to use a life cycle support system to systemize the supporting process.
6. Professional from the company needs to configure an application when he is in the site. IT Support person has to use the user's computer remotely.
7. IT support staff is asked to reserve conference room for a meeting by a professional from senior management. Further he needs supporters help in checking the availability of office staff

**Important pertinent Content (knowledge):**

- Basic concepts of quality assurance
- Different types of Maintenance eg: Scheduled maintenance, Preventive Maintenance, Run to Breakdown Maintenance in IT field
- Remote Desktop Assistant
- Life Cycle Support Systems

**Potentially useful teaching methods (optional):**

- e. g.
- Interpret and identify the services covered in a Service Level Agreement
  - Write a specification for a real office IT Hardware requirement.
  - Suggest the type of maintenance required for different hardware devices
  - Use life cycle support system in provide support
  - Use tools such as Remote Desktop to provide remote assistant. Logon to a computer remotely and configure applications.

Competency Area	Competency
<b>Administrative support</b>	<ul style="list-style-type: none"> <li data-bbox="743 233 1430 310">– Interpret and Manage Service Level Agreements(SLA)</li> <li data-bbox="743 317 1430 394">– Define and execute a scheduled maintenance on equipment</li> <li data-bbox="743 401 1430 436">– Build and monitor the IT related Asset Registry</li> <li data-bbox="743 443 1430 478">– Perform quality checks on delivery of purchases</li> <li data-bbox="743 485 1430 562">– Record and update service, incident, and support requests in the life cycle support system</li> <li data-bbox="743 569 1430 646">– Perform scheduling and resource booking using appropriate software tools</li> <li data-bbox="743 653 1430 730">– Perform remote support to users. E.g.: Remote Desktop</li> <li data-bbox="743 737 1430 814">– Engage with the industry to find correct resources</li> <li data-bbox="743 821 1430 909">– Provide and maintain documentation on configuration, deployment, and maintenance of supported technology.</li> </ul>

### 3. Supporting Corporate Network and Peripherals

<b>Module Title and Code:</b>	<b>Module: Supporting corporate network and peripherals</b>
	<b>Time Frame: 90 hours</b>
<b>Reference to NCS:</b>	See Competency Profile of Sector Skills Council
<p><b>Competencies (job functions and soft skills) and descriptions:</b></p> <p>Trainees maintain, monitor and have control over network infrastructure. They identify differences &amp; functionalities of routers, switches, cables, access points, wireless modems, and its uses. Then they identify how to assess the requirements of network and have knowledge to purchase right device to right process.</p> <p>Students identify and solve network connectivity issues related to passive devices (cables and ports). Moreover, they recognize the usage of fiber optic networks.</p> <p>Trainees recognizing faults of active device (switches/routers). Further they identify and solve client and server-end network interface card issues. Trainees carry out preventive maintenance to protect network peripherals, servers, firewalls. They identify faults before it happen. Errors can be identified beforehand and trainees are aware of such errors.</p> <p>Trainees recognize the importance of network security. Further they identify the uniqueness of different types of network and propose suitable security solutions. Trainees design and secure network according to company standards. Moreover, they are aware of ISO standards.</p> <p>Trainees assign users, maintain user accounts, recover passwords and provide support to the network users.</p> <p>They test and evaluate new network technologies as a key responsibility of support staff. They are up-to-date with trending technologies. As the technologies are rapidly changing, trainees have a habit of scanning for new technologies and adapt to them as they emerge.</p>	
<p><b>Typical related work situations to master:</b></p> <ol style="list-style-type: none"> <li>(1) Troubleshooting &amp; maintaining the network infrastructure.</li> <li>(2) Office has a requirement of setting up a network suitable for small office.</li> <li>(3) How to react when a network error occurs</li> <li>(4) Trainee is requested to educate staff on avoiding attacks and Security breaches.</li> <li>(5) When expanding the organization, additional equipment &amp; design must be integrated with existing network.</li> </ol>	

<b>Important pertinent Content (knowledge):</b>	<ul style="list-style-type: none"> <li>- Network types &amp; its usage</li> <li>- Network requirements to specified software.</li> <li>- Installing &amp; configuring equipment in the appropriate location using best practices.(ISO/IEC 27033)</li> <li>- Using Backup Storage.</li> <li>- Troubleshooting Wired/wireless Network issues.</li> <li>- Securing the Network.(ISO/IEC 27033)</li> </ul>
<b>Potentially useful teaching methods (optional):</b>	<p>e. g.</p> <ul style="list-style-type: none"> <li>- Students must participate Hand on Lab session to identify Networking equipment</li> <li>- Assigning group projects (Setup Small network)</li> <li>- Arrange field visit to see practical implementation in industry.</li> <li>- Students must be updated regularly through internet. Guide them how to be updated and introduce tech websites that provide technical knowledge.</li> <li>- Ask the students to do a market research about Networking equipment &amp; accessories prices using internet or visiting the market.</li> <li>- Final examination will be 50% will be practical lab test then other 50% will be MCQ basis.</li> </ul>

Competency Area	Competency
<b>Corporate Support</b>	<ul style="list-style-type: none"> <li>- Assess the requirement of networking items and recommending for purchase</li> <li>- Define computer network equipment for an office</li> <li>- Setting up a basic computer network in an office recovery systems</li> <li>- Configure a maintain basic network for a simple office</li> </ul>

## 4. Assisting Office Users with System and Application Software

<b>Module Title and Code:</b>	<b>Module: Assisting office users with systems and application software</b>
	<b>Time Frame: 110 hours</b>
<b>Reference to NCS:</b>	See Competency Profile of Sector Skills Council
<p><b>Competencies (job functions and soft skills) and descriptions:</b></p> <p>Trainees identify different types of system software, mainly in an office environment operating systems and the related software such as device drivers, system utilities, file management tools etc. and install and configure the user's computers as required by the users to perform the required office activities.</p> <p>They set up the SMTP service that needs to be used to configure outgoing emails and further configuration of outlook/ SharePoint for the email facility.</p> <p>Trainee carries out configuration steps in order install and set up a file server. E.g.: setting up the Linux file server using Samba.</p> <p>Trainee demonstrates the implementation of a web server such as Apache in a LAMP environment or any other suitable example to demonstrate the above.</p> <p>They install common application software such as the office suit products, gaming software, designing software, development environments etc. which will be best suited for different types of office users.</p> <p>Trainees set up and configure a video conferencing facility thus enabling the office users to communicate in order to perform online meetings and discussions. E.g.: using Skype, Zoom etc.</p> <p>Trainee administers a content management system (CMS) set up for the company in the best possible manner. E.g.: Joomla, WordPress. etc.</p> <p>What application software needs to be used will change with time and when new requirements add on to the system.</p> <p>Trainees update the software and keep the latest version of the software accessible to the office user, ensuring the office user has the latest features of the product.</p>	
<p><b>Typical related work situations to master:</b></p> <ol style="list-style-type: none"> <li>1. Users do not know how to install the software in the computer for them to use for their daily office work, they are not aware of the operating system to be installed and</li> </ol>	

<p>what application software needs to be installed along with it.</p> <ol style="list-style-type: none"> <li>2. The office users do not know how to set up the email in his/ her computer and will only know how to send and receive emails.</li> <li>3. He/ she has no idea of what a file server can do and how to set it up</li> <li>4. Similarly the office user does not know how the files are stored and what needs to be implemented.</li> <li>5. The users know that the web site needs to be hosted and how it is done, where it is done, when it should be done is not easily answerable.</li> </ol>	
<p><b>Important pertinent Content (knowledge):</b></p>	<ul style="list-style-type: none"> <li>- how to install system and application software</li> <li>- know how to install the above software to different devices.</li> <li>- Knowledge of setting up different types of servers mainly email, file and web servers.</li> </ul>
<p><b>Potentially useful teaching methods (optional):</b></p>	<p>e. g.</p> <ul style="list-style-type: none"> <li>- Make the students install at least three different types of operating systems.</li> <li>- Make them install up to 10 different types of application software belonging to different categories such as office tools, designing tools, development tools such as programming languages and DBMS, setting up communication software such as Zoom or Skype</li> <li>- Make the students set up an email server and a few email clients and further make a communication among them</li> <li>- Create a game which will allow two teams to install a file server and store and retrieve data more efficiently.</li> <li>- Allow a group of students to make a video conferencing using a tool such as Zoom.</li> <li>- This module can also have a final examination since it is the longest module of the syllabus</li> </ul>

Competency Area	Competency
<b>System Software Support</b>	<ul style="list-style-type: none"> <li>– Install common systems software</li> <li>– configure and administer a basic email system</li> <li>– configure and administer a basic file server</li> <li>– configure and administer a basic web server</li> </ul>
<b>Application Software Support</b>	<ul style="list-style-type: none"> <li>– Install common application software</li> <li>– Configure email clients and perform housekeeping activities</li> <li>– Configure and use basic video conferencing an online meetings</li> <li>– Administer CMS. E.g.; Joomla, Wordpress etc.</li> <li>– Manage centrally and update application software</li> </ul>

## 5. Making Use of Internet Services for Business Efficiency

<b>Module Title and Code:</b>	<b>Module: making use of Internet for business efficiency</b>
	<b>Time Frame: 50 hours</b>
<b>Reference to NCS:</b>	See Competency Profile of Sector Skills Council
<p><b>Competencies (job functions and soft skills) and descriptions:</b></p> <p>Trainees demonstrate the knowledge in Infrastructure as a Service (IaaS) to be used in a business for several reasons such as pay-per-use scheme to enhance required corporate bandwidth on peak usages. E.g.: election system, e-ticketing systems...etc.</p> <p>They implement private cloud computing, public cloud computing and hybrid cloud computing in situations suited best for the organization.</p> <p>Trainees demonstrate the use of test and development environments on cloud. Thus optimizing corporate assets using cloud resources.</p> <p>Big Data analytics is widely used in today's world thus allowing organizations to analyze the trends of customers buying power, customer churn, supplier analysis and even competitor analysis. Trainees provide ways and means of providing such information for management decision making.</p> <p>They are aware of ways file storage takes place using cloud computing and use cloud computing to take corporate backups thus allowing access from any remote location via internet.</p> <p>Corporate devices are now connected using wireless fidelity (Wi Fi) for connecting corporate networks and for internet services. Trainees are aware of how to set up and maintain these facilities for the company</p>	
<p><b>Typical related work situations to master:</b></p> <ol style="list-style-type: none"> <li>(1) Office users need to know how cloud computing can benefit a company</li> <li>(2) Office users want to safe guard corporate data when cloud resources are used</li> <li>(3) Management is planning to invest unnecessarily on corporate infrastructure such as servers and computers</li> <li>(4) Office users tend to use traditional ways of connecting and using internet based resources</li> </ol>	

<b>Important pertinent Content (knowledge):</b>	<ul style="list-style-type: none"> <li>- Knowledge of different cloud computing options.</li> <li>- Setting up cloud resources within a company</li> <li>- Setting up and maintaining Wi-Fi technology</li> </ul>
<b>Potentially useful teaching methods (optional):</b>	<p>e. g.</p> <ul style="list-style-type: none"> <li>- Students can be given an assignment to find five types of cloud computing solutions to a given corporate problem</li> <li>- if the students can be given minimum hardware and a simple internet service make them into groups and ask them to provide a solution such as for data backups, file storage and retrieval etc.</li> <li>- Ask the students to make a Wi-Fi connection to a given set of devices within the shortest possible time. Allow them to use internet and configure the devices.</li> <li>-</li> </ul>

<b>Competency Area</b>	<b>Competency</b>
<b>Internet Support</b>	<ul style="list-style-type: none"> <li>- Illustrate the applications of cloud computing</li> <li>- Demonstrate the knowledge of cloud computing to corporate day to day activities. E.g. file sharing</li> <li>- Configure and Manage Wi-Fi devices</li> </ul>

## 6. Securing Office IT Environment

<b>Module Title and Code:</b>	<b>Module: Securing Office IT Environment</b> <b>Time Frame: 50</b>
<b>Reference to NCS:</b>	See Competency Profile of Sector Skills Council
<p>Competencies (job functions and soft skills) and descriptions:</p> <p>Most of us probably have our whole life on your smartphone or laptop. Photos, work documents, notes and reminders. Some of the things you keep in your devices might be deeply personal, things you don't want to share with anybody else, now imagine a successful malware attack can destroy everything. Sometimes it can even expose your personal information for the whole world to see.</p> <p>The support staff member should also be mindful of the different options available for scanning, such as file/ program scan and full system scan when picking a suitable AV(Anti-Virus), in simple the steps of rescue needs to be known and further should be able to execute these steps in correct sequence.</p> <p>Trainees identify and recommend the best antivirus to suit the purpose. They advise on all types of threats that may affect the user's computer, or even the corporate network and resources before taking the steps to make a rescue.</p> <p>They prepare and execute a malware support plan, which consists of the following: Preparation, Detection and Analysis, Containment, Eradication, Recovery, Report.</p> <p><a href="http://www.techrepublic.com/article/follow-this-six-step-malware-response-plan/">http://www.techrepublic.com/article/follow-this-six-step-malware-response-plan/</a></p>	
<p><b>Typical related work situations to master:</b></p> <p>(1) The office user while using his/ her computer finds it is under attack due to a malware and does not know what needs to be done.</p> <p>(2) The computer has been attacked and the user is worried since all his/ her sensitive data was stored in the computer.</p>	

<b>Important pertinent Content (knowledge):</b>	<ul style="list-style-type: none"> <li>- selecting an antivirus software</li> <li>- configuration of the antivirus software to the device</li> <li>- Rescue the computer when its attacked</li> </ul>
<b>Potentially useful teaching methods (optional):</b>	<ul style="list-style-type: none"> <li>- Make the students search for the internet and find five types of anti-virus software and make a report on the strength and weaknesses of each.</li> <li>- Give them live stories of recent attacks and what really happened due to these attacks.</li> <li>- Give them a computer, which has been attacked and ask them to rescue the files, data...etc.</li> <li>- Give them a situation of an attack and ask the students to identify what the anti-virus software is saying and what you need to do next</li> </ul>

Competency Area	Competency
<b>Security and Control Support</b>	<ul style="list-style-type: none"> <li>- Choose appropriate Anti-Virus software for computers</li> <li>- Rectify Cyber threats</li> </ul>

## 7. Assisting Users on Mobile Devices

<b>Module Title and Code:</b>	<b>Module: Assisting users on mobile devices</b> <b>Time Frame: 60</b>
<b>Reference to NCS:</b>	See Competency Profile of Sector Skills Council
<p>Competencies (job functions and soft skills) and descriptions:</p> <p>Trainees recognize different Mobile Device Operating Systems and they explain uniqueness of each working platform. E.g.: Android, Apple OS and Windows etc. Trainees identify and recommend appropriate applications for each System considering the requirement.</p> <p>Trainees assist users to use customized mobile applications for day-to-day work. Further, they install and configure customized mobile applications related to business operations.</p> <p>They help office staff in synchronizing multiple devices with Mobile Units.</p> <p>Trainees guide users on usage of internet and email services for office related works via tabs and smart phones. Further, they facilitate users in performing different types of communication through mobile devices. They assist employees to use cloud services using mobile devices.</p> <p>They recognize the capabilities of Modern Mobile devices such as Tabs, Notebooks and Smart Phones. Moreover, they assist users to get the advantage of Multimedia, Networking and Hardware Related Capabilities of modern smart devices.</p> <p>Trainees assist users in securing the mobile devices. They instruct users on information security standards of the company related to mobile devices usage.</p>	
<p><b>Typical related work situations to master:</b></p> <ol style="list-style-type: none"> <li>1. Company has its own application for the employees who work in different sites. IT support staff is allocated to configure the application according the requirements of each job profiles</li> <li>2. Company staff needs remote assistance for mobile device usage</li> <li>3. Employee needs to receive office emails to his/her personal mobile.</li> <li>4. An employee informs that he/ she has lost his mobile device which it has important information related to business.</li> <li>5. A new employee is recruited to the company. He/she needs office mobile number of whole staff in his smart phone immediately. And you need to update contact details of the newcomer in other mobile devices of the company.</li> <li>6. Employee has bought a new mobile device and requires important data from the previous device to be transferred to the new device.</li> </ol>	
<b>Important pertinent Content (knowledge):</b>	<ul style="list-style-type: none"> <li>- Android, IOS and Windows mobile devices</li> <li>- Capabilities of Modern Smart Phones</li> </ul>

<p><b>Potentially useful teaching methods (optional):</b></p>	<p>e. g.</p> <ul style="list-style-type: none"> <li>- Do research using internet on Operating Systems and technologies of modern smart phones</li> <li>- Explain how mobile devices can be used effectively and efficiently in different businesses and office environments.</li> <li>- Suggest five things a user can do to secure the information in his mobile phone.</li> <li>- Do a research (through internet) and find how mobile phones are going to be used in future for office productivity and for better communication process.</li> </ul>
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<b>Competency Area</b>	<b>Competency</b>
<p><b>Mobile Device Support</b></p>	<ul style="list-style-type: none"> <li>- Synchronize multiple devices with Mobile Units(MU)</li> <li>- Configure and manage mobile software</li> <li>- Use different mobile O/S environments</li> <li>- Backup and restore mobile device data</li> </ul>

## 8. Guiding Corporate Users with Data Management

<b>Module Title and Code:</b>	<b>Module: Guiding Corporate users with Data Management</b>
	<b>Time Frame: 70 hours</b>
<b>Reference to NCS:</b>	See Competency Profile of Sector Skills Council
<p>Competencies (job functions and soft skills) and descriptions:</p> <p>Trainees recommend commercial database management systems which are available in the market and also for what purposes those products are best suited for. They assist office users in configuring these products to manage their corporate data.</p> <p>The purpose of the DBMS can be varying so the support personnel should be aware of the features best suited for each required environment. Trainees advise the staff accordingly.</p> <p>Office users use the data in the stored Database on a daily basis, however they may or may not take regular backups. Trainees support the staff members to setup back up procedures in the DBMS and ensure that the data is properly backed up and restored in a crisis.</p> <p>Disaster recovery is not only taking back ups and restoring the database as and when needed it is more cumbersome than all this. Trainees implement such disaster recovery plans such as the 7D model that is used by various vendors, that includes Discover, Design, Develop, Deploy, Day-to-Day, Defend, and Decommission.</p> <p>The support personnel should be able to make a database connection ideally for JAVA for a DBMS such as MySQL and further using a web Driver such as selenium to test the connection. Further ensure the connection works by passing and retrieving values to and from the MySQL DBMS.</p> <p><a href="http://www.guru99.com/database-testing-using-selenium-step-by-step-guide.html">http://www.guru99.com/database-testing-using-selenium-step-by-step-guide.html</a></p>	
<b>Typical related work situations to master:</b> <ol style="list-style-type: none"><li>(1) Office users don't know what DBMS to purchase, they need to do a task but not aware of the commercial DBMS</li><li>(2) Office users work with the data but unaware of how to back it up.</li><li>(3) the database has a crash, we need to recover the data in the database</li><li>(4) Company itself may not have a proper Disaster Recovery plan, we need to have a recovery plan to protect our data.</li></ol>	

<b>Important pertinent Content (knowledge):</b>	<ul style="list-style-type: none"> <li>- Identifying and installing of DBMS</li> <li>- Installing and configuration of the Database</li> <li>- Setting up backups and restoring features</li> <li>- Making of a Database connecting to many programming languages.</li> </ul>
<b>Potentially useful teaching methods (optional):</b>	<p>e. g.</p> <ul style="list-style-type: none"> <li>– Students can be given an assignment to find five types of DBMS, used in the industry and give reasons.</li> <li>– Give the students a task to in a form of a game to complete taking the full data backup, and the team who may do this tasks would win. Ask them to explain the way it was done.</li> <li>– Ask the students to make a disaster recovery plan for a given organization using the Microsoft’s 7D model for Disaster recovery.</li> <li>– A practical test asking the student to make database connectivity for at least two different DBMS.</li> <li>– A final examination can be held to identify the knowledge of the students with regard to in a form of an MCQ and structured set of questions.</li> </ul>

Competency Area	Competency
<b>Database Support</b>	<ul style="list-style-type: none"> <li>– Demonstrate knowledge in different commercial databases and product positioning</li> <li>– Taking data backups and restore data</li> <li>– Demonstrate understanding high availability disaster recovery systems</li> <li>– Manage database connectivity</li> </ul>

## 9. Power Use of Office Productivity Tools

<b>Module Title and Code:</b>	<b>Module: Power Use of Office Productivity Tools</b>
<b>Reference to NCS:</b>	<b>Time Frame: 60</b> See Competency Profile of Sector Skills Council
<p>Competencies (job functions and soft skills) and descriptions:</p> <p>Trainees recognize advance options of office productivity tools. Further they perform as a power user of all office applications.</p> <p>Trainees assist office staff in using logical functions, data functions and text function related to spread sheets. They prepare reports using data sorting methods and perform statistical analysis through spread sheets. Moreover they present their finding using visuals and graphical methods.</p> <p>Trainees contribute in increasing office efficiency and productivity through advance tools of text editors, spread sheets and presentation tools.</p> <p>They configure office communication tools related to office operations. Further they help employees to use office communication applications.</p> <p>Trainees configure online communication systems and assist employees in using video conferencing facilities.</p> <p>Trainees operate a basic BI (Business Intelligence) tool for analysis</p>	
<p><b>Typical related work situations to master:</b></p> <ol style="list-style-type: none"> <li>1. An employee needs to sort data through spread sheets</li> <li>2. An employee needs to filter data and validate them through spread sheets</li> <li>3. An employee needs IT support present his statistical analysis/ results through visuals</li> <li>4. A new employee needs to configure his own video conferencing id/ profile</li> <li>5. An employee needs assistance on advanced features on word processing</li> <li>6. An employee needs support on power point presentation</li> </ol>	
<b>Important pertinent Content (knowledge):</b>	<ul style="list-style-type: none"> <li>– Advance tools of Text editors (MS Word), Spread Sheets (Excel) and MS Power Point</li> <li>– Applications for Video conferencing</li> <li>– Capabilities of video conferencing</li> </ul>

<p><b>Potentially useful teaching methods (optional):</b></p>	<p>e. g.</p> <ul style="list-style-type: none"> <li>- Filter data sets in spread sheets using advance filtering technics</li> <li>- Sort and validate data in spread sheets</li> <li>- Explain how logical functions, data functions and text functions can be used effectively and efficiently.</li> </ul>
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<b>Competency Area</b>	<b>Competency</b>
<p><b>Power Use of Office Productivity Tools</b></p>	<ul style="list-style-type: none"> <li>– Configure office communication software</li> <li>– Operate Word Processor as a power user</li> <li>– Operate spread sheet application as power user</li> <li>– Operate power point application as power user</li> <li>– Operate database application to store data</li> <li>– Operate a basic business intelligence (BI) tool</li> </ul>

## 10. Career Skills 2

<b>Module Title</b>	<b>Course Duration</b>
Career Skills 2	At least 60 hours
<b>Objectives of the module</b>	
<p>This module is compulsory in all NVQ Level 4 courses. It builds on the soft skills developed on Level 3 NVQ courses, and will enable students to enjoy productive employment that requires fulfilling responsibilities. This course develops communicative skills in English and the ability to read and write constructively, and a command of grammar to facilitate this. It also develops cognitive skills with regard to effective work and the ability to work efficiently alone and in a team.</p>	
<b>Competencies</b>	
<p><b>a. Understand and use simple expressions to communicate</b> This subject provides the necessary communication skills so that students can express individual ideas, emotions, preferences, frame and answer questions with regard to reasons and methods, explain simple procedures, understand and respond to complex instructions, describe daily routines, conduct and respond to interviews, express ability and inability and describe a process sequentially</p>	
<p><b>b. Read and write effectively</b> This subject provides students with the necessary skills to write about how they feel, connect sentences meaningfully, read and carry out instructions, understand/produce arguments, read/write longer texts and summaries them, prepare reports and charts, write Personal and Official Letters and apply for jobs</p>	
<p><b>c. Use English correctly</b> This subject is not taught separately but is included in the development of the productive and receptive skills above, since awareness of the structure of the language is necessary for these The development of appropriate vocabulary is also targeted to deploy the above skills.</p>	
<p><b>d. Develop the capacity to think and plan productively</b> This subject develops cognitive abilities and skills with regard to effective work, with strengthening of the ability to organize information and assess information to solve problems systematically, understand chronological order, develop the concepts of mind and task mapping and apply them, understand governmental structures and coordination mechanisms, collect information and prepare development plans and make.</p>	
<p><b>e. Develop effective working capacity</b> This subject develops the capacity to work effectively individually and in collaboration with others through presenting themselves positively, understanding the advantages of working together, understanding the characteristics of different people and the impact these have, speaking persuasively and understanding and working with maps</p>	
<p>f. Students will be able to work with computers so as to enter information swiftly and store it systematically, retrieve it easily, communicate on email, and use social media with due attention to ethics</p>	
<p>g. Students will plan and implement two group projects, one with regard to environmental protection, the other a social service project in response to identified community needs. Students should plan the project systematically, target specific outcomes, report on progress, and evaluate the project on completion.</p>	

## 11. Annexure – Summary of Competencies

Module Number	Module	Competency Area	Competencies	Hours for the Module
1	Supporting corporate hardware and peripherals	hardware support	Troubleshoot the peripherals E.g.: printers, access points, scanners. Projectors etc.	70
1	Supporting corporate hardware and peripherals	hardware support	Assess the requirement of hardware items and recommend for purchase	
1	Supporting corporate hardware and peripherals	hardware support	Install of common office hardware and peripherals	
1	Supporting corporate hardware and peripherals	hardware support	Assemble a basic computer	
1	Supporting corporate hardware and peripherals	hardware support	Recommend suitable hardware configuration for different users	
2	Administering IT infrastructure and business process	Administrative support	Interpret and Manage Service Level Agreements(SLA)	60
2	Administering IT infrastructure and business process	Administrative support	Define and execute a scheduled maintenance on equipment	
2	Administering IT infrastructure and business process	Administrative support	Build and monitor the IT related Asset Registry	
2	Administering IT infrastructure and business process	Administrative support	Perform quality checks on delivery of purchases	
2	Administering IT infrastructure and business process	Administrative support	Engage in life cycle support systems	
2	Administering IT infrastructure and business process	Administrative support	Perform scheduling and resource booking using appropriate software tools	
2	Administering IT infrastructure and business process	Administrative support	Perform remote support to users. E.g.: Remote Desktop	
2	Administering IT infrastructure and business process	Administrative support	Engage with the industry to find correct resources	

2	Administering IT infrastructure and business process	Administrative support	Provide and maintain documentation on configuration, deployment, and maintenance of supported technology.	
3	Supporting corporate network and peripherals	Network support	Assess the requirement of networking items and recommending for purchase	90
3	Supporting corporate network and peripherals	Network support	Define computer network equipment for an office	
3	Supporting corporate network and peripherals	Network support	Setting up a basic computer network in an office	
3	Supporting corporate network and peripherals	Network support	Configure a basic network for a simple office	
4	Assisting office users in systems and application software	System software support	Install common systems software	110
4	Assisting office users in systems and application software	System software support	configure and administer a basic email system	
4	Assisting office users in systems and application software	System software support	configure and administer a basic file server	
4	Assisting office users in systems and application software	System software support	configure and administer a basic web server	
4	Assisting office users in systems and application software	Application software support	Install common application software	
4	Assisting office users in systems and application software	Application software support	Configure email clients and perform housekeeping activities	
4	Assisting office users in systems and application software	Application software support	Configure and use basic video conferencing an online meetings	
4	Assisting office users in systems and application software	Application software support	Administer CMS. E.g.; Joomla, Wordpress...etc.	

4	Assisting office users in systems and application software	Application software support	Manage centrally and update application software	
5	Making use of internet services for business efficiency	Internet support	Illustrate the applications of cloud computing	50
5	Making use of internet services for business efficiency	Internet support	Demonstrate the knowledge of cloud computing to corporate day to day activities. E.g. file sharing	
5	Making use of internet services for business efficiency	Internet support	Configure and Manage Wifi devices	
6	Securing office IT environment	Security and control support	Choose appropriate Anti-Virus software for computers	50
6	Securing office IT environment	Security and control support	Rectify identified cyber threats. E.g.: Phishing	
7	Assisting users on mobile devices	Mobile device support	Synchronize multiple devices with Mobile Units(MU)	60
7	Assisting users on mobile devices	Mobile device support	Configure and manage mobile software	
7	Assisting users on mobile devices	Mobile device support	Use different mobile O/S environments	
8	Guiding corporate users in data management	Database support	Demonstrate knowledge in different commercial databases and product positioning	70
8	Guiding corporate users in data management	Database support	Taking data backups and restore data	
8	Guiding corporate users in data management	Database support	Demonstrate understanding high availability disaster recovery systems	
8	Guiding corporate users in data management	Database support	Manage database connectivity	
9	Power use of office productivity tools	Office tool support	Configure office communication software	60
9	Power use of office productivity tools	Office tool support	Operate office applications as a power user	