ICA20105
Certificate II in Information Technology

ICAW2001B:
Work Effectively in an IT Environment

Student Handbook
<table>
<thead>
<tr>
<th>Version</th>
<th>Date of Release</th>
<th>Authorisation</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>28/08/08</td>
<td>S.Morris</td>
<td>Primary Release</td>
</tr>
<tr>
<td>1.01</td>
<td>10/12/08</td>
<td>S.Morris</td>
<td>Alterations to competency codes due to certificate changes</td>
</tr>
</tbody>
</table>

**Forms Control:**

All documents related to the delivery or assessment of ICA20105: Cert II in Information Technology will have a version number displayed in the footer of the document. This Modification History page will appear after each title page of a handbook to ensure that the materials involved in the delivery and assessment of the certificate remain in a constant state of ongoing review and improvement. Comments on changes will only show sufficient detail to enable a user to identify the nature and location of the change. Documents will be reviewed at least on an annual basis at the official internal review and fellow instructors and industry representatives will be consulted throughout the year in informal discussion.
UNIT CODE: ICAW2001B

UNIT TITLE: Work Effectively in an IT Environment

Description

This unit defines the competency required to work effectively within the IT environment of an organisation by researching and assembling information about the organisation's IT systems, equipment, software, policies and governance arrangements.

Elements of Competency

<table>
<thead>
<tr>
<th>ICAW2001B/01</th>
<th>Identify IT roles in an organisation and related relevant policies and procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Identify IT roles in an organisation and briefly describe what services they perform.</td>
</tr>
<tr>
<td>1.2</td>
<td>Identify and describe key players from the IT service areas previously identified.</td>
</tr>
<tr>
<td>1.3</td>
<td>Identify IT policies and procedures and research whether they are used in practice.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ICAW2001B/02</th>
<th>Identify IT equipment, software and operating systems used by the organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Identify IT equipment, operating systems and software used in the organisation and understand the importance and role within the organisation.</td>
</tr>
<tr>
<td>2.2</td>
<td>Establish that all of the equipment locations and service requirements are maintained according to organisational requirements and prevailing policies and procedures.</td>
</tr>
</tbody>
</table>
Information Technology Roles/Careers

The IT industry is well-known for its breadth and diversity. It is dynamic (ever-changing), so students should read widely to find out about current trends and emerging technologies.

Since computers are so widely used in business, most jobs require specific computer skills and an understanding of the computer tools used to enhance performance (e.g. barcode scanners at supermarket checkouts). Many organisations provide on-the-job training, specifically relevant to their business software tools, which are usually custom-made.

The broad fields in the IT industry can include those associated with hardware, software, web design, networking, marketing, help desk, and so on. Many jobs in IT are a broad combination of several areas. More specific computer-related positions (listed alphabetically) include:

- Animator
- Computer librarian
- Computer operator
- Consultant
- Content editor
- Data entry operator
- Desktop support specialist
- Illustrator
- Information system manager
- Information technology manager
- Multimedia designer
- Network engineer
- Network manager
- Programmer
- Software developer
- System analyst
- Technical support person
- Technical writer
- IT Trainers
- Webmaster
- Word-processing operator
- Information systems designer

This list is by no means exhaustive – just the tip of the iceberg! Almost all positions have career paths that allow you to move up the career ladder to positions with more responsibilities and higher pay. Although technical skills are important in IT, communication skills are essential. Improving customer service will always be an essential goal in the business world. The IT industry increasingly wants staff with a combination of diverse skills, including:

- Relevant education and/or experience
- The ability to work as part of a team
- Business skills
- Relevant technical skills
- Good written and oral communication skills
- Interpersonal skills

Activity 1

You are to research IT roles/careers online. Choose eight roles (from the list above or other related roles) and create a table in Word to contain your research. Save in a new folder (ICAW2001A) as Activity 1. Format page to landscape. Your table should look like this:

<table>
<thead>
<tr>
<th>Job:</th>
<th>Description: (including salary information)</th>
<th>Tasks:</th>
<th>Personal Requirements:</th>
<th>Education and Training:</th>
<th>Employment Opportunities:</th>
<th>Contacts for further information:</th>
</tr>
</thead>
</table>

Websites that may help you include:

- www.careers.gov.au
- www.careersonline.com.au
- www.jobguide.dest.gov.au
- www.jobjuice.gov.au
- www.monster.com.au
- www.myfuture.edu.au
**Activity 2**

*Analysing Job Advertisements*

Your task is to research five IT jobs (each from a different IT career area). You are to copy and paste the job advertisements into a Word document. In the same document after the advertisements, create the table below and fill in the details:

<table>
<thead>
<tr>
<th>Job No:</th>
<th>Job Title:</th>
<th>Duties &amp; Special Skills:</th>
<th>Essential Criteria:</th>
<th>Desirable Criteria:</th>
<th>Type of Organisation or Department:</th>
<th>How to Apply:</th>
<th>Do you have the necessary skills/qualities and/or qualifications?</th>
</tr>
</thead>
</table>

Websites that may help you include:

**The Role of the IT Department**

The functions of an IT department can vary greatly from company to company. The main functions however of an IT department can include:

- Operating systems management
- Hardware
- Software
- Network maintenance (including backup, security, disaster recovery, IT policy management)

The IT department can be structured in a number of ways: it can be a separate branch, department or division, or an integrated function throughout an organisation.

**Activity 3**

*Our IT Department*

- Open up a Word document, type the heading “Activity 3: Our IT Department”. Type in the following questions and then answer:
  1. Who are the people that make up the IT Department at our school?
  2. What are the tasks that each of them undertake?
  3. What IT career does each person officially undertake (i.e. from the list of careers on the previous page)

- Create a one-page flyer in Publisher marketing our IT Department. The flyer must state who the main players are, where you can find them and the different tasks they can help you with. Make the flyer presentable. You may include graphics and the school logo (which can be saved from the school webpage).
Software

Software is the term given to sets of instructions (programs) which accept information from the user and give a desired output. There are two types of software:

- **Operating system** - programs that organize and manage the operations of the computer.
- **Applications software** - individual programs that can perform specific functions.

**Applications Software**

Applications Software can fall into several categories. The table below lists some of these categories and their uses:

<table>
<thead>
<tr>
<th>CATEGORY:</th>
<th>USES:</th>
<th>EXAMPLES:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word Processing</td>
<td>Used for manipulation of text i.e. edit, display, rearrange, organize text, spell check &amp; word usage.</td>
<td>Assignments, reports, flyers, information, bulletins etc.</td>
</tr>
<tr>
<td>Spreadsheet Programs</td>
<td>Used to create spreadsheets for use in manipulating figures, i.e. calculation of mathematical and scientific data. Used to convert numerical information into graphical representation such as line graphs, bar graphs, pie graphs and scatter graphs.</td>
<td>Accounting reports, statistical reports, personal budgeting, financial calculations.</td>
</tr>
<tr>
<td>File Management and Database Programs</td>
<td>Used to manage or keep track of lists such as mailing lists on client information - information is stored in individual files.</td>
<td>Addresses, telephone numbers, test results, library catalogues, itineraries, medical/dental records (any information normally stored on index cards or folders).</td>
</tr>
<tr>
<td>Communication Software</td>
<td>Used with appropriate internet connection to interpret HTML transmissions so that the user can access information off the Internet and transmit information via email etc.</td>
<td>Access other databases/ information services, e-mail, online banking, up-to-date news, online shopping etc.</td>
</tr>
<tr>
<td>Graphics and Digital Media Programs</td>
<td>Used for the creation of graphic files. For example CAD (Computer Aided Drawing) and the editing and creation of digital media (such as photos and video).</td>
<td>Digital photos, video, multimedia presentations, graphical and technical drawings.</td>
</tr>
<tr>
<td>Desktop Publishing Programs</td>
<td>Used to create documents with text and graphics - similar capabilities to word processors with manipulation of text but with emphasis on graphics (variety of fonts, borders, pictures, boxes, lines etc).</td>
<td>Newspapers, magazines, title pages, flyers, theatre tickets, business cards, advertising charts, newspapers, catalogues.</td>
</tr>
<tr>
<td>Integrated Packages</td>
<td>A group of application software programs specifically designed to be used in conjunction with one another. An advantage of integrated packages is that you only need to learn one set of commands which apply to most sections within the package.</td>
<td>Mail merging using word processing and database programs, office presentations using word processing and PowerPoint etc.</td>
</tr>
</tbody>
</table>

**Activity 4**

1. In a Word document, create and populate the table above. Change the page setup to landscape. Add a column to the right and head it Example Software. Add the names of appropriate packages for each category. Save as Activity 4.

2. Under that table, add a second table and fill in:

<table>
<thead>
<tr>
<th>Task</th>
<th>Software Package you would use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Write a letter</td>
<td></td>
</tr>
<tr>
<td>Send an email</td>
<td></td>
</tr>
<tr>
<td>Do a calculation for interest earned</td>
<td></td>
</tr>
<tr>
<td>Keep records of phone numbers and addresses</td>
<td></td>
</tr>
<tr>
<td>Get information on a particular subject</td>
<td></td>
</tr>
<tr>
<td>Put a graph of sales figures into a letter</td>
<td></td>
</tr>
<tr>
<td>Send the same letter to a number of people</td>
<td></td>
</tr>
<tr>
<td>Draw a logo for your business</td>
<td></td>
</tr>
<tr>
<td>An architectural drawing of a house plan</td>
<td></td>
</tr>
<tr>
<td>Do a statement which reconciles your personal bank account with the bank’s statement</td>
<td></td>
</tr>
</tbody>
</table>

3. Can you think of advantages and perhaps disadvantages of using integrated packages?
**Operating Systems**

The Operating System is the platform software that interfaces your hardware to the software applications you want to run. All individual pieces of software that you use (Microsoft Word, MYOB etc.) cannot run unless they are able to sit and run as part of the operating system. Operating systems can perform the following functions:

- Manage files
- Perform common hardware functions
- Provide user interface
- Provide hardware independence
- Manage system memory
- Manage processing
- Control access to system resources
- Accept keyboard input
- Store data on disks
- Send data to output devices
- Command-based interfaces

There are many aspects of the operating system that need to be managed, monitored and maintained. The IT department is primarily responsible for these duties.

**Operating System Types**

There are many operating systems available to IT operators today. All have varying functionality, restrictions and limitations such as file sharing and client capacities. Some operating systems can include Windows, Novell, Unix and Mac OS.

### Activity 5

1. Open a new Word document. Using the Internet for research, fill in the table below:

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Uses:</th>
<th>Advantages:</th>
<th>Disadvantages:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Novell</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unix</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mac OS</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Most of you would be used to commercial software. A different form of software, referred to as Open Source is gaining popularity.

   (a) Explain what Open Source software is.

   (b) Open Source software is free, so how do companies and developers make money?

   (c) Linux is an Open Source Operating System (based on the old Unix). Research the system and report why it is gathering popularity.

3. What is the computer Operating System that we use at school?
4. What security and file sharing restrictions are setup on our network?
Hardware

The term “hardware” can effectively be applied to anything that we physically use. Just as it is impossible for us to watch a DVD without the aid of a DVD player, we cannot load and use software unless we have the hardware to load it on. Hardware commonly found in an IT department can include:

- Personal Computers including: processors, media drives (CD ROM etc), memory, hard drives, input devices (mouse, keyboard etc), monitors, speakers.
- LAN (Local Area Network) hardware including: cabling, networking hardware (routers, bridges, hubs etc)
- Printers
- Scanners
- Communication devices (e.g. webcams, microphones etc)

Activity 6

Watch the video “How Computers Work”. Access the worksheet from shared drive and type in the answers to the required questions. Save to your drive as Activity 6.

Sourcing Hardware

When sourcing and installing computer hardware in an IT environment, it is important that the hardware is going to be able to do what it is that you need it to do. Before any new hardware is purchased, the following questions must be asked.

<table>
<thead>
<tr>
<th>Question</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>What do I need the hardware to do?</td>
<td>Are there any specific or specialised needs for the hardware? For example,</td>
</tr>
<tr>
<td></td>
<td>will it be required to run software with a high graphics component? Ensure</td>
</tr>
<tr>
<td></td>
<td>that the hardware purchased is capable of running all current and future</td>
</tr>
<tr>
<td></td>
<td>requirements.</td>
</tr>
<tr>
<td>Do I already have it?</td>
<td>Why waste money on something that your department already has? Check your</td>
</tr>
<tr>
<td></td>
<td>current hardware register to see if you have equipment capable of</td>
</tr>
<tr>
<td></td>
<td>performing the required function already and if so, is it available for use?</td>
</tr>
<tr>
<td>How much will it cost?</td>
<td>Have you shopped around for the best price? (Our school policy requires us</td>
</tr>
<tr>
<td></td>
<td>to get quotes from three different suppliers before a purchase is made.)</td>
</tr>
<tr>
<td>Is it compatible with current hardware and</td>
<td>Will the new hardware purchased work on the current network? Most hardware</td>
</tr>
<tr>
<td>software?</td>
<td>will come with a hardware compatibility list (HCL). Always double check the</td>
</tr>
<tr>
<td></td>
<td>HCL to ensure that it will work on your system before you purchase.</td>
</tr>
<tr>
<td>Warranties</td>
<td>Are there any warranties on the hardware? Check the warranty conditions to</td>
</tr>
<tr>
<td></td>
<td>ensure that you are not going to use the hardware in a manner that may</td>
</tr>
<tr>
<td></td>
<td>breach them.</td>
</tr>
</tbody>
</table>

Activity 7

In Word, create a checklist that could be used in our school to assist with the purchase of new hardware.
Company IT Policy

Part of the maintenance role of an IT department can often be the implementation of policies to be adhered to by all users of the network. Covering most aspects of the running of an IT network such as maintenance and security, the IT policy should contain the following information:

- An outline of the organisation’s goals
- An outline of the organisation’s IT requirements and strategies
- A completed risk assessment, outlining possible threats and the implementation and maintenance of proposed safeguards
- A description of the overall network security program, including ongoing maintenance and enforcement
- An outline of appropriate and inappropriate behaviour for users in such a way that the document can be used in court if security violations occur.

Activity 8

1. Source a copy of our school’s IT Acceptable Usage Agreement. Analyse the agreement. Write a paragraph on the agreement, answering the following questions:

   - Is the agreement up to date?
   - Does the school follow the rules/regulations outlined in the agreement?
   - Can you recommend any changes/additions to the agreement to improve it?

2. The school currently has issues with how our IT department is run and is experiencing difficulties on the network with viruses. The school is about to be audited on it’s hardware and software registers. After viewing these documents, teacher’s code of conduct documents and the school’s IT policy, review the current situation based on the notes below. Create a table which outlines Problems Identified in one column and then next to it another column with Possible Solution/s.

Situation:

You visited the site and established the following:

- All staff have been issued with computer systems which run from Windows NT network with Internet connections.
- Windows NT is installed and a site licence covering all users has been purchased.
- Microsoft Office is also installed on the network and can be accessed by all users. One licence has been purchased.
- A program writer was recently employed to write a database program to meet the specific needs involved in recording student data. A contract was established and signed by both parties and included a licence agreement to run the program through the network so that all users could have access.
- A computer technician has not been employed for only a limited number of hours. Minor technical problems to date have been fixed under warranty and major issues have had to be put aside due to lack of time.
- All staff were involved in a training session on how to use the network. Full network and data access was granted to all employees enabling staff to change the operational setup of the network, access all data stored in the database, and update and modify it at any time. No passwords are in use and multiple users have access to the system at the same time.
- During a recent electrical storm, the network crashed and many client files were unrecoverable.
- It was discovered that some staff were down-loading games from the Internet and saving them on the network so that they could be played during lunch breaks. Other staff were copying games onto the network from personal USBs for the same purpose.
- The owner of the database program has approached the manager with a concern that an employee or employees are downloading database information, saving it to USB and selling it on the black market.
- Parents have made complaints that:
  - They have been receiving bills for fees which have previously been paid for;
  - Information on student contact details is inaccurate;
  - Other government departments have been issued with personal information (e.g. personal contact details) that could only have been accessed through this school;
  - There has been a recent spate of burglaries and theft.