

# AS/A Level Applied Information and Communication Technology 9713

## Unit 9: Communication

### Recommended Prior Knowledge

Students will require a basic knowledge of the internet and e-mail systems, from the theory Unit 4 (Networks). It is important that students understand the importance of security in computer systems. In preparation for this module the following topics should be covered:

- the language of communication
- sending and receiving of e-mails and attachments
- locating and downloading information from the internet using URLs, search engines, advanced search techniques, file compression, virus protection and other security measures.

In preparation for this module you could cover the following topics: handling passwords to gain access to the operating system, applications software and data. They will also require a basic knowledge of file management techniques including:

- creating, renaming, deleting and access to directories/folders
- browsing a directory or folder
- creation of different file types

### Context

This sub-unit can be studied on its own, or in conjunction with other practical units. It is recommended that the practical skills of sending and receiving e-mail messages and file attachments are used for reinforcement in subsequent units. Likewise, further internet searching can also be incorporated into other modules.

### Outline

This sub-unit covers the following areas:

The use of e-mail to:

- receive messages
- send messages and files using facilities such as reply, forward, copy, create new messages
- receive files as attachments and save them
- send files as attachments

The use of the Internet to:

- locate information on a specified website
- search for information using a search engine
- download and save information

An evaluation of internet sources relating to:

- if an internet search is the most appropriate method of gathering the required information
- identifying the depth of search required
- the need to refine or expand the search criteria
- the most appropriate search methods
- the validity of data found
- bias and mis-information in internet based data
- plagiarism using the internet
- the security of personal information

AO	Learning outcomes	Suggested Teaching activities	Learning resources
9a	Use e-mail	<p>Revision of the language specific to communication, including mail box, address book, address line, carbon copy, blind carbon copy, address, send, reply, forward, file attachments, browser, URL, search engine.</p> <p>Revision of e-mail netiquette and salutations.</p> <p>Revision and practice sending and receiving e-mails with the correct address, subject line, file attachments and compressed (zipped) file attachments, including the use of carbon copies and blind carbon copies. Revision of forwarding e-mail messages to other recipients.</p>	<p><b>Supporting files - Exercise 1</b></p> <p>Tutor preparation required:</p> <ul style="list-style-type: none"> <li>• set up e-mail addresses</li> <li>• prepare e-mail message to be sent to the students</li> <li>• check the connection to e-mail host system.</li> <li>• prepare a list of e-mail addresses so that students can send files to the teacher and/or other students</li> <li>• prepare files (with a variety of different file types) to be used as practice attachments</li> <li>• provide CLEAR instructions showing what the students have to do.</li> </ul> <p>Host system for e-mail messages, which could be internal to the</p>

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9b(i)	Use the internet	<p>Revision of common file formats such as .rtf, .txt and .csv and be able to import or load these into their preferred and appropriate software package. Students may need to practise locating files from a variety of network drive locations as well.</p> <p>Revision of embedded viruses within emails and file attachments. Discuss the type of file attachments that may contain viruses, the use of anti-virus software, the importance of regular updates, disinfection of files and quarantining files.</p> <p>Revision of mailbox storage limits and good housekeeping relating to e-mails.</p> <p>Discuss the need for security of personal information when using e-mail, including giving out personal details (such as bank details). Discuss the interception of data during transmission. Phishing sites discussed.</p> <p>Revise the features of a web browser, searching for and logging in to websites, advanced search features, Boolean searches, use of the address bar and URL, home pages, site maps, uploading and downloading, file compression (zipping).</p>	<p>centre or globally known hosts like:  <a href="http://www.hotmail.com">http://www.hotmail.com</a>  <a href="http://www.yahoo.com">http://www.yahoo.com</a></p> <p><b>Supporting files - Exercise 2</b></p> <p><b>Supporting files - Exercise 3</b></p> <p>Tutor preparation required:</p> <ul style="list-style-type: none"> <li>• check internet connection</li> <li>• check connection to the websites to be used and the location of files for download by candidates</li> <li>• know what is on any specified website</li> </ul>

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		<p>Revise viruses, pop-ups, data miners, Trojans etc. that can be downloaded with Internet use. Discuss prevention of these using firewalls, anti-virus scanners etc. Carry out a research project to compare different anti-virus software and present a report using appropriate software.</p> <p>Revise the difference between the internet and an intranet.</p> <p>Revise system storage limits and good housekeeping when managing received files.</p>	<ul style="list-style-type: none"> <li>• be aware of any Internet search results set for the students</li> <li>• ensure firewall and anti-virus software is functioning with the latest updates.</li> <li>• provide instructions showing what the students have to do.</li> </ul> <p>Web browser software with live internet connection.</p> <p>A variety of different online search engines like:  <a href="http://www.google.com">http://www.google.com</a>  <a href="http://www.yahoo.com">http://www.yahoo.com</a>  <a href="http://www.ask.co.uk">http://www.ask.co.uk</a>  <a href="http://www.dogpile.com">http://www.dogpile.com</a>  <a href="http://www.altavista.com">http://www.altavista.com</a></p> <p>Other websites like:  <a href="http://www.hothouse-design.co.uk">http://www.hothouse-design.co.uk</a>  <a href="http://www.dygitell.com">http://www.dygitell.com</a></p> <p><b>Supporting files - Exercise 4</b></p> <p><b>Supporting files - Exercise 5</b></p> <p><a href="http://www.about-the-web.com/shtml/scams.shtml">http://www.about-the-web.com/shtml/scams.shtml</a></p>

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9b(ii)	Evaluate internet sources	<p>Introduce the idea that the internet is not always the most appropriate (or fastest) method of finding the required information – other online searches and manual methods including:</p> <ul style="list-style-type: none"> <li>• contacting experts</li> <li>• libraries</li> <li>• other resource centres</li> <li>• discussion groups / forums</li> </ul> <p>may be more effective / efficient / produce correct results.</p> <p>Develop the idea of using the most appropriate search string to find information using internet search engines. Include the use of a thesaurus to find alternatives with the same or similar meanings to use as search strings. Provide a list of suitable and relevant search topics, possibly with local impact.</p> <p>Evaluate the advantages of using Advanced search features to refine searches to produce manageable results. Utilise other advanced search features like returning only materials or images which can be freely used without infringing copyright law.</p> <p>Teach the need to refine search results. This will include narrowing or expanding the search criteria as</p>	<p>Tutor preparation required:</p> <ul style="list-style-type: none"> <li>• check internet connection</li> <li>• check connection to the chosen websites to be used and the location of files for download by candidates</li> <li>• know what is on any specified website</li> <li>• be aware of any Internet search results set for the students</li> <li>• ensure firewall and anti-virus software is functioning with the latest updates.</li> <li>• provide instructions showing what the students have to do.</li> </ul> <p>Web browser software with live internet connection.</p> <p>Thesaurus, either online or in paper format.</p> <p>A variety of different online search engines like:  <a href="http://www.google.com">http://www.google.com</a>  <a href="http://www.yahoo.com">http://www.yahoo.com</a>  <a href="http://www.ask.co.uk">http://www.ask.co.uk</a>  <a href="http://www.dogpile.com">http://www.dogpile.com</a>  <a href="http://www.altavista.com">http://www.altavista.com</a></p> <p>Prepare a list of websites and pre tested searches to show searches for copyright free material / images.</p> <p>A variety of different online search engines like:  <a href="http://www.google.com">http://www.google.com</a></p>

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		<p>appropriate. Students could compare the results of the same search using different search engines; this could be number of hits, relevance, date of source etc.</p>	<p><a href="http://www.yahoo.com">http://www.yahoo.com</a>  <a href="http://www.ask.co.uk">http://www.ask.co.uk</a>  <a href="http://www.dogpile.com">http://www.dogpile.com</a>  <a href="http://www.altavista.com">http://www.altavista.com</a></p>
		<p>Develop students to think critically about 'Do I really need to search?' Sometimes, other alternatives like trying to work out (or even guess) the URL from information already known about the company or institution. Can trial and error give the required results? Students to try guessing URLs of well known companies or organisations.</p>	<p>Prepare a list of websites and pre tested searches to show expanded and refined search strings.</p> <p>A variety of pre-tested websites with URLs that can be guessed / worked out by students with extensions like:</p> <p><a href="http://www.product.com">http://www.product.com</a>  <a href="http://www.product.co.uk">http://www.product.co.uk</a>  <a href="http://www.product.com.au">http://www.product.com.au</a>  <a href="http://www.institution.org.uk">http://www.institution.org.uk</a>  <a href="http://www.department.gov.uk">http://www.department.gov.uk</a>  <a href="http://www.college.edu">http://www.college.edu (US)</a>  <a href="http://www.college.ac.uk">http://www.college.ac.uk (UK)</a></p>
		<p>Students should be taught to establish the depth of search required, is it just an overview or in-depth information required? This should lead to informed choices about the search method to be used.</p>	<p>NB These are not existing websites and are only included as possible examples.</p>
		<p>Teach the validity of the data found, identify clues from the URL and sources identified on the webpage. Identify the author/provider and bibliography within the website.</p>	<p>Pre-set web pages on the intranet or in printed form which contain fake material and bibliography. The fake bibliography should give the students clues to the lack of validity of the data.  <a href="http://www.andoverhs.anoka.k12.mn.us/IMC/bogus.html">http://www.andoverhs.anoka.k12.mn.us/IMC/bogus.html</a>  this is one source of bogus web sites. Teachers can use a search engine to find others.</p>

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		<p>Teach students to try to use sources that offer as much of the following information as possible: author's name, author's title or position, author's organizational affiliation, date of page creation or version, author's contact information.</p>	<p><a href="http://www.virtualsalt.com/evalu8it.htm">http://www.virtualsalt.com/evalu8it.htm</a>  This provides students with the CARS Checklist (Credibility, Accuracy, Reasonableness, Support).</p>
		<p>Test the CARS checklist by asking students to search for information on the author Robert Harris. The task could be to find out what he is and details of some of his work.</p>	
		<p>Discuss the evaluation of the quality of websites, look at the suggested websites for ideas, develop/design (or use from website) checklists for evaluation</p>	<p>A good starting point is;  <a href="http://library.albany.edu/usered/eval/eresources.html">http://library.albany.edu/usered/eval/eresources.html</a> which also has numerous links to other relevant sites.  Also:  <a href="http://eduscapes.com/tap/topic32.htm">http://eduscapes.com/tap/topic32.htm</a>  which also has links to sample exercises.</p>
		<p>Teach the bias of the data found, identify clues from the URL and sources identified on the webpage. Determine whether the document / resource provide the user with factual information or is designed for mis-information. Identify the author/provider and</p>	<p>A variety of pre-tested websites with URLs that can be used to determine bias like:  <a href="http://www.manutd.com">http://www.manutd.com</a>  <a href="http://www.cricket.com.au/">http://www.cricket.com.au/</a>  <a href="http://www.absupporters.com/">http://www.absupporters.com/</a></p>

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		<p>bibliography within the website.</p>	<p>A variety of spoof websites with URLs that can be used to determine bias and misinformation like:</p> <p>The True but Little Known Facts about Women and AIDS  <a href="http://www.ithaca.edu/library/research/AIDSFacts.htm">http://www.ithaca.edu/library/research/AIDSFacts.htm</a></p> <p>Feline Reactions to Bearded Men  <a href="http://www.improb.com/airchives/classical/cat/cat.html">http://www.improb.com/airchives/classical/cat/cat.html</a></p> <p>Dream Technologies International (CLONES-R-US)  <a href="http://www.d-b.net/dti/">http://www.d-b.net/dti/</a></p>
		<p>Teach students to identify if the information provided in a website is current or out of date.</p>	<p>Prepare a list of websites and pre test searches to identify if the material is current. An alternative is to prepare intranet web pages giving current and out of date information on the same topic.</p>
		<p>Teach students how to detect plagiarism from the internet, and how to avoid plagiarising from the internet. How this can be avoided by adhering to copyright legislation and by identifying full references where work is copied.</p>	<p>The following might be useful resources on anti-plagiarism:</p> <p>Anti-Plagiarism Strategies for Research Papers  <a href="http://www.virtualsalt.com/antiplag.htm">http://www.virtualsalt.com/antiplag.htm</a></p> <p>What Is Plagiarism?  <a href="http://gervaseprograms.georgetown.edu/hc/plagiarism.html">http://gervaseprograms.georgetown.edu/hc/plagiarism.html</a></p> <p>Plagiarism Stoppers: A Teacher's Guide  <a href="http://www.ncusd203.org/central/html/where/plagiarism_stoppers.html">http://www.ncusd203.org/central/html/where/plagiarism_stoppers.html</a></p>



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		<p>Discuss the need for security of personal information on the internet, especially when asked for personal information in web based forms.</p> <p>Explain how to identify secure websites, the need for secure servers, and use of secure servers to protect personal details (such as bank details).</p> <p>Briefly explain the need for encryption of data to ensure that packets of 'sensitive' data cannot be read if intercepted during transmission.</p>	<p>Select sample web based forms such as:</p> <ul style="list-style-type: none"> <li>Banks</li> <li>Registering for software download</li> <li>Local examples- such as driving licence online application</li> </ul>