Essential Student Skills: Computing key skills

Introduction
This section will cover the computing skills that you need to develop in order to work effectively on your course.

Objectives
By the time you have completed this section you should be able to:

- Create basic documents using Microsoft Word and PowerPoint
- Organise your work into files and folders
- Source and resize appropriate images

Please also see sections:

- **Getting online:** to find out how to set up your device for use at home and college
- **UHI technologies**: to find out about some of the specific learning technologies used by the university

man with laptop and maintenance online - Shutterstock

What do I need to know?
Many students worry that they need to have a high level of IT literacy to cope with their studies. In fact, there is a relatively small number of skills required (and they are all covered in this section or other sections of Essential Student Skills):

- **Use the internet** for research and to access learning materials (see Finding Learning Resources).
- Use UHI **core technologies**, primarily the Brightspace VLE and email (see UHI technologies).
- **Word process** essays, reports and assignments.
- Create **PowerPoint slideshows** to support oral presentations.
- **Manage** your electronic files (such as Word documents, PowerPoint slideshows and images).
- Source **images** for use in your work.
- Use **UHI Libraries**, and reference correctly.
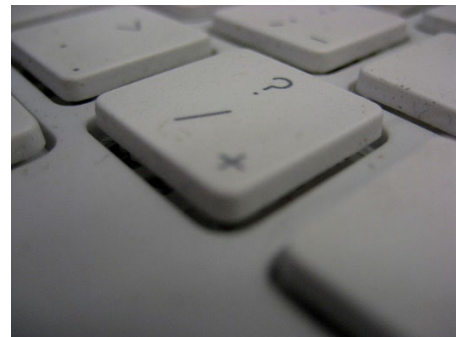
'Any questions?' by Michael Janssen from Flickr, used under Creative Commons Attribution 2.0 Generic

Don't forget that you will learn as you go (you don't need to be an expert from day one!), and that there are always people around to help you.

As all UHI devices are installed with **Microsoft operating systems** and **Microsoft Office applications**, this section is written with these specific products in mind.

Audio: Student talking about IT skills
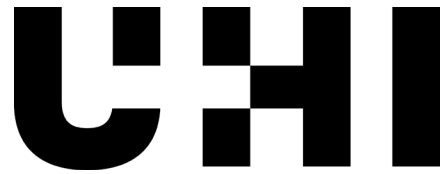
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"I would say that you just, you need to be able to work your way around the internet. You need time to know how to use the Internet and Word, so that you can write your essays. We were shown how to do everything and certainly some of the older people on the course haven't had a lot of trouble at all. You don't need to be spectacularly completely IT literate at all as long as you can use the internet and you can use Word document - then you are ok. And there's always other people to ask, you know, especially if you go through to your lectures, there's always other people in your class. And again, the lecturers are always available to help."

Jargon buster

Operating system
The operating system is the main programme that your computer uses to function. This provides the 'desktop' or background that you see when you switch your computer on.

The operating system used at UHI is Microsoft Windows. As technology develops different versions of Windows are released. Most UHI devices are currently installed with Office 365.

Application
Applications are other programmes that are run by the operating system. These perform individual tasks (e.g. browsing the internet, word processing, playing audio and video files, viewing and editing photos.) and are accessed using the icons, or via the Start menu, on your desktop.

Microsoft Office Applications are a set of programmes most related to performing 'office' tasks such as creating documents, emails, spreadsheets and slideshow presentations.

Skills audit

Complete this skills audit to determine your current IT skill and knowledge level. After each section you will be directed to resources that can help you improve.

Go to: Skills audit questionnaire

Jisc Discovery tool

Jisc's Discovery tool enables you to explore different elements of ICT proficiency they call 'digital capabilities' (based on their framework, see picture opposite) and to find out more about your own digital practice.

Through answering their questions, you will assess your confidence and capability in the areas relevant to you as a student.
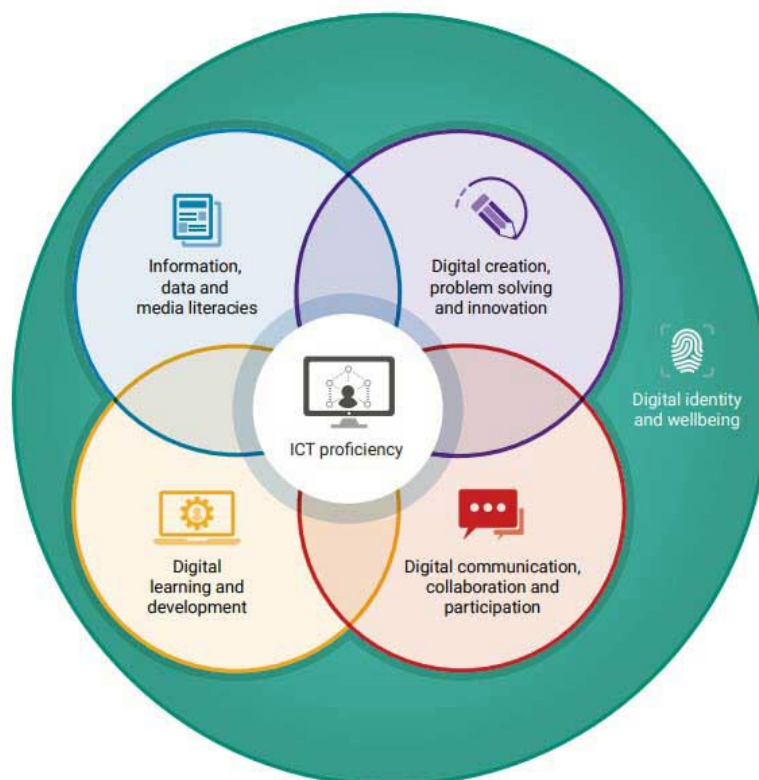
At the end you will receive a personal report with next steps to try and links to relevant resources.

Jisc Discovery tool
Click on the follow link to access UHI's page dedicated to the Jisc Discovery tool.

Digital capabilities framework (CC BY-NC-SA 4.0)

Microsoft Office 365
The university offers Microsoft Office 365 free to all students with an @uhi.ac.uk email address, and it is automatically installed on all university devices.

Office 365
Find out more about the software (which includes Word, Excel, PowerPoint, OneNote and Outlook) and access the online guide by visiting the following UHI webpage.

OneDrive
As part of your Office 365 account, you have access to OneDrive – a tool that gives you 1TB of cloud storage. With OneDrive you can save, and share, over 300

different file types. Keep this in mind when reading through the next page of this resource (Managing files).

Find out more about OneDrive on the [ITDI OneDrive information page](#)

Note: please read the 'Important information about using this service' section as it contains crucial details about OneDrive should and should not be used for; there is also a link to [guidance from Microsoft](#), which includes video tutorials.

Managing files

During your time at University you will produce, and be given, a lot of work and resources in electronic format; such as word processed lecture notes and essays, reading lists, notes from your tutors, and book chapters.

Storage space

Just like physical documents, these electronic documents take up storage space. You can save files in a number of places:

- On your own device
- On the University network
- On a memory stick or disc

'[Filed away](#)' by Mark Crossfield from Flickr, used under an [Creative Commons Attribution-ShareAlike 2.0 Generic](#) license

Files saved to University drives will be backed up and can be restored if there are issues. Files saved on a personal device or memory stick won't be backed up and you may want to ensure that you create your own backups of important files.

Files and folders

To access the information that you want easily is it useful to organise it in to **folders or libraries.** How you structure these files and folders is up to you. For example, you may want to create one folder for all your lecture notes and another folder for all your book chapters; or you may want to create a different folder for each module/unit that you are studying. Find a system that works for you- you want to be able to locate that vital document quickly when you need it!

Jargon buster

File

A **file** is an individual item such as a Word document, a photograph, a PowerPoint slideshow or an audio file.

Folder

A **folder** is a container in which files, and other folders, are kept. You can create your own folder structure to organise your files in a way that makes sense to you.

Library
Libraries are slightly different from folders in that they are spaces to arrange rather than store information. Creating a library allows you to display items (such as files and folders) from different locations on your computer as a single collection, without moving them from the location in which they are stored.

Creating a folder structure
Creating a folder structure
This activity shows you one way in which files and folders could be arranged. Below is a list of folder and file names that the structure uses. Write the correct file and folder names into the folder structure given below (you may use a name more than once).

Folder Names: Revision, Lecture Notes, Cell Biology, DNA, My Work, Cell Biology, DNA
File Names: CB notes week 2, DNA notes week 2, CB revision past papers, DNA revision flash cards, DNA notes week 1, CB notes week 1
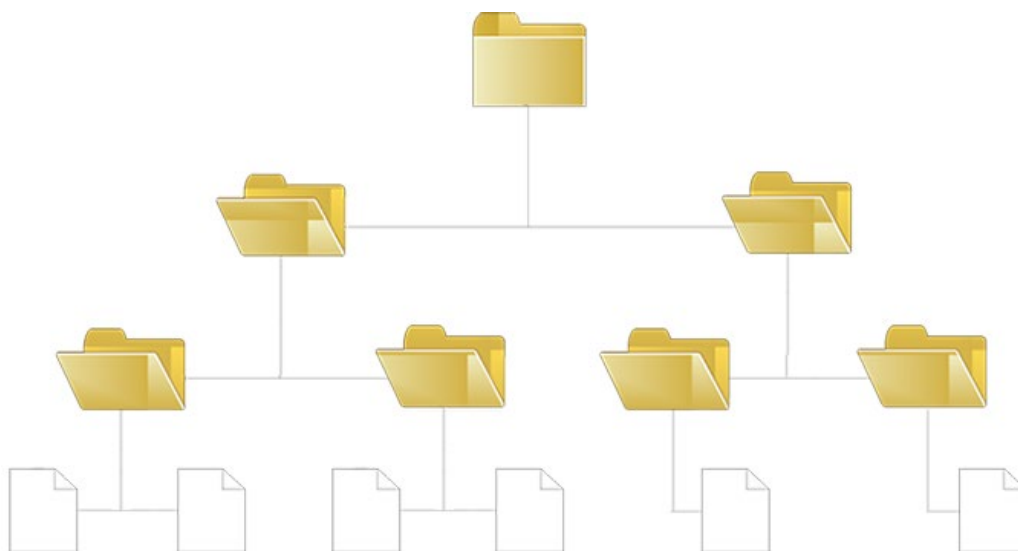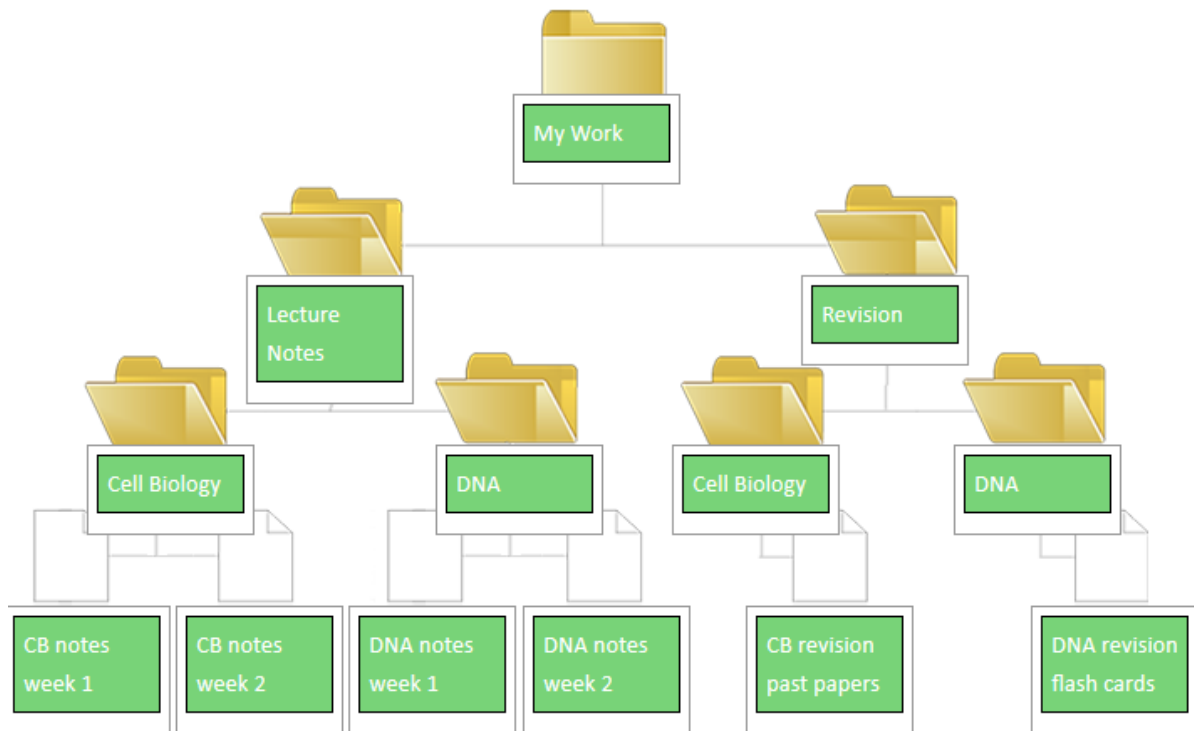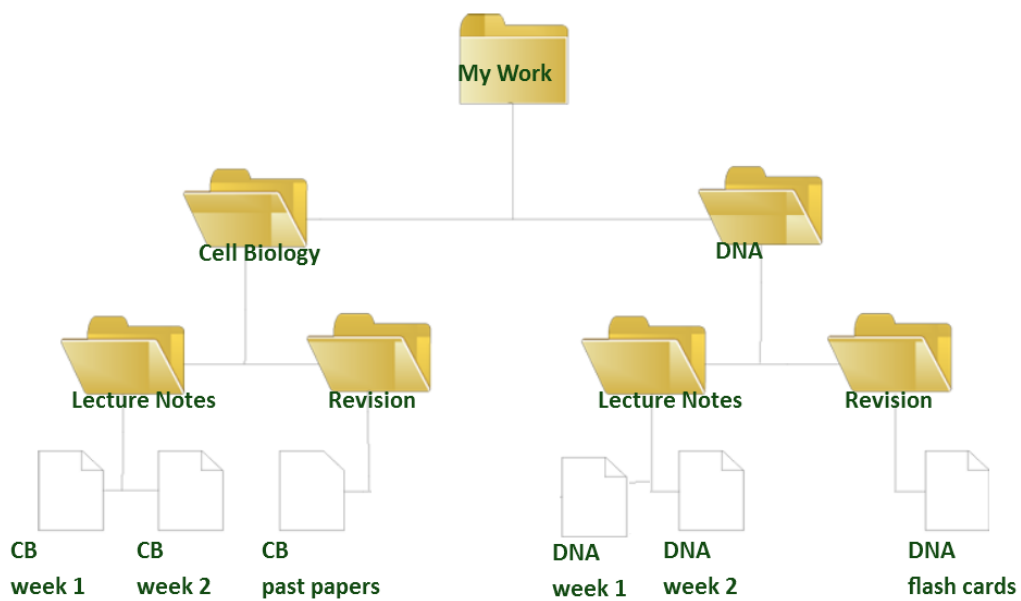

Structure for activity

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Answers
Solution 1:

Solution 2:

Using images

Sometimes it is necessary and useful to include images within your written assessments, or presentations. Before you use an image in your work, ask yourself these practical and legal questions first:

- **Legal**: Are you legally permitted to use the image; does copyright prevent you from using an image in your work?
- **Practical**: Will the image display correctly? What effect will including the image have on the file of your document? Will this make it too large, e.g. will you still be able to upload it to the VLE, email it to your tutor, save it on to your devices?

Using images (appropriately) infographic

This section will help you to answer these questions and become confident in using images in your work.

Stay legal

When you use an image, you need to first check that **you are permitted to do so** and you then need to **credit the author**.

Do you have permission?

Using images is not just a case of searching online and saving a photo that you like. You need to have permissions to use them.

Crediting the author

If you are legally permitted to use an image, you need to credit the author of the image wherever it is used in your work. You can do this by putting a caption under the image stating:

- the author's name;

- where the image can be found (e.g. book title, or website URL);
- (where appropriate) a link to any license that permits you to use the image.
- See an example on the next page.

Creative Commons

Creative Commons is a non-profit organisation set up to allow copyright holders a means to share their work with the world, while still retaining certain rights. If the work has a Creative Commons (CC) licence, it can be used, subject to the conditions within the license, without contacting the copyright holder for permission.

These licenses clearly state the conditions under images can be used.

'Colours of Peace' by Vincent van der Pas from Flickr, used under Creative Commons Attribution 2.0 Generic

These include whether an image can be used for personal or commercial purposes, and whether or not the author requires attribution or credit.

Types of license
Attribution: You must credit the creator and provide a link to the original material
Non-commercial use: You may not use the image for commercial purposes
When modifying someone's image:
Share alike: If you edit or build upon the image, you may distribute it only under the terms of the original licence. (so if the original license says not for commercial use, then
Non derivatives: If you edit or alter the image, you may not distribute the modified image

Collections with no attribution required

Sites such as Pixabay, Pexels and Unsplash offer vast amounts of high quality [and free] images with no formal requirement for attribution (they don't require it but they do appreciate it - also your lecturer will always appreciate it if you explain where things you use in your work come from).

The wording of their licenses differ slightly but on the whole, images can be downloaded, adapted and used free of charge - as long as you don't sell/ profit from them.

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Pixabay

Pexels

Unsplash

Useful links
BBC copyright aware
JISC copyright for students guide

Size matters
Pixels are the little dots that make up the images on a computer screen (the term is short for 'picture element'). When using images in electronic format, dimensions are often given in pixels rather than centimetres.

Images with a lower pixel count can appear grainy, particularly if the size of the image is increased. Those with a higher pixel count will be clearer, but also require more storage space and can take time to upload or send in emails.

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Pixels per inch
A key figure when considering printing images is the number of **pixels per inch** or PPI. You calculate this by dividing the pixel count by the dimension of the proposed printed image in inches.

This image has a PPI of
800 ÷ 4 = 200 for width
and
1200 ÷ 6 = 200 for length

For good quality printed images aim for a PPI of 200 or above.

Saving images: File types
When saving your images, you have to strike a balance between the file size and quality of the image: a smaller file size usually means a lower quality image.

- Lower quality images are fine to use if the image is small, such as in a Word document, but will not display very well if used as part of a PowerPoint presentation for example.

800 x 1200 pixels

- Higher quality images will show a greater level of detail, but may increase the file size so that it is too big to send as an email attachment for example.
- Find out more about different image file formats at BBC bitesize
- Find out how to reducing the file size of a picture at Microsoft Office help

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Using images: checklist
Here are a small number of resources which will help you to use images correctly and effectively.

Icon	Skill	Tutorial
	Know why file sizes should be reduced Reduce the file size of a picture	Compressing a picture - Microsoft Office Help
	Know the best graphic format	15 best image file types - (Matteo Duo, 2022)
	Search for Creative Commons images	Finding content that you can reuse - Google Search for Creative Commons images - Creative Commons website

Conclusion
In this section you have been introduced to Microsoft Word and PowerPoint; two of the main programmes that you will use in your studies. You have also learned about file management and how to source and use images.

Quiz
1. Microsoft Office is the main operating system used by the University: True or False (False Microsoft Office is a set of applications (programmes), The main operating system used by the University is Microsoft Windows).
2. It is best to use Microsoft Word when producing essays and reports: True or False (True Microsoft Word is a word processing system and so is the programme best suited to the creation of text documents such as essays and reports).
3. You do not have to follow strict rules when naming and organising files and folders: True or False (True. Organise files and folders in a way that makes sense to you and allows you to locate items quickly).
4. If you use Creative Commons images in your work then you don't need to credit the author: True or False (False. Even if the author of an image permits it to be used free of charge, you still need to credit the author by adding a caption containing the author's name and the source of the image).

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Tech skills audit - self-assessment

Questions

Please rate your tech skills using the following values. (E) means it is an essential skill for your studies with us.

Please score the elements in each section as follows:

1. Don't know how to do it (1 point).
2. I can do it but not well (2 points)
3. I can do it but need to practice (3 points)
4. I can do it well (4 points)

Using the computer
- Turning the computer on and off (E) _____
- Opening and closing apps on the laptop or desktop (E) _____
- Highlighting and selecting from a menu or a group of icons, by using a mouse or a trackpad and use this skill to move between apps (E) _____
- Printing out documents, select and use a network or standalone printer (E) _____
- Saving and filing a document within a folder structure (E) _____
- Using toolbars, drop-down menus and dialogue boxes _____
- Cutting, copying, and pasting text, pictures or numbers across apps (E) _____
- Using interactive help in any app to find out how to do something (E) _____
- Using accurate terms to refer to computer apps or hardware (E) _____

Score of 9-18: You do not yet have the basic skills that are required for your studies with us and will need to become a competent digital learner. Some self-study resources can be found in the list below:
- [Practice your mouse skills with some fun games](#)
- [Brush up on your computer terminology on the website 'Webopedia'](#) you can also use it to search any terms which are unfamiliar to you
- Learn about [the file system concept in this short video](#)
- Study [this tutorial about File Explorer in Windows](#)

Score of 19-27: You have some basic skills, but you are not to make the most of your studies with us. Some self-study resources can be found in the list below:
- [Brush up on your basic computer skills](#) with these series of self-study tutorials
- [Learn user interface terms for any app to get good tech support](#) by asking accurate questions
- Improve your [keyboard skills with this typing tutor online](#)
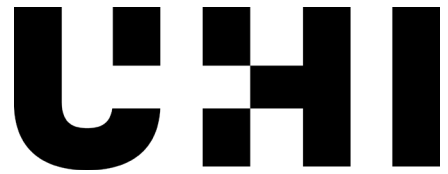
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Score of 28-36: You have all the basic skills for university study but you will need more than basic skills to be an effective online learner, the rest of the audit will offer a score on further skills and also offer more resources.

Using word processing for your assignments
- Using Microsoft Word to create and edit basic text documents (E)
- Using the ribbon for editing documents by selecting font size and style, etc. (E)
- Inserting headers and footers and page numbers into a document (E)
- Creating a table of contents
- Creating and formatting tables to display information within a document
- Adding hyperlinks to websites within a document (E)
- Incorporating charts into a document
- Understand the purpose of different file formats and able to export files

Score of 8-16: You are a Word novice and will need to improve your skills to make the most of your studies with us. Some self-study resources can be found in the list below:
- [Microsoft Tutorials are your best source for learning](#), set aside time for self-study and practice

Score of 17-24: You have the basic skills to word process assignments but will benefit from [running through the Microsoft tutorials](#) at least once.

Score of 25-32: You are an advanced user of Word and have the skills to produce documents to a high standard. You can keep your skills sharp and up to date by using [LinkedIn Learning](#). Just Log in with your student credentials and you are ready to learn.

Handling information using spreadsheets ____
- Creating a spreadsheet in Microsoft Excel ____
- Entering labels and numerical data into cells ____
- Entering formulae into cells and apply them to selected ranges of cells ____
- Using Excel tools to add up totals on a spreadsheet ____
- Using filters to display data within a spreadsheet ____
- Using Excel data to produce simple graphs and charts ____
- Print in desired format different element of a file ____
- Can use some Excel keyboard shortcuts ____

Score of 8-16: You are an Excel novice, below are some resources to help you improve:
- [Microsoft Tutorials self-study](#) time needs to be scheduled in your diary. These tutorials are kept updated and are scaffolded well for learning in small chunks.
- [LinkedIn learning](#) will help you improve further and keep your skills updated.

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- [The Tik Tok Excel Dictionary](#) is always a fun way to learn quick tips.

Score of 17-24: You have all the basic skills in Excel. You can always benefit from scheduling some self-study time to refresh your skills:
- [LinkedIn learning](#) will help you improve further and keep your skills updated. Just sign in and search for what you need to learn.
- The [Tik Tok Excel Dictionary](#) is always a fun way to learn quick tips.

Score of 25-32: You are an advanced user of Excel. Review resources for previous scores to refresh your skills, and [review this Shortcuts List](#) there may be some you don't yet use.

Using the internet
- Understand what a browser is and how to use different browsers _____
- Searching for information using search engines such as Google, search text for words or phrases (E) _____
- Planning and implementing an advanced search (including the use of inverted commas ("") and logical operators such as AND, OR, IF/THEN etc.) (E) _____
- Downloading files from the internet from different browsers (E) _____
- Organizing websites, bookmarks and favourites for easy reference _____
- Communicating with others through social media and forums _____
- Composing, sending and receiving emails (E) _____
- Attaching files to e-mails (E) _____

Score of 8-16: You are a novice at using the Internet, you will need to study the basic concepts of it and learn how to use it for educational and not just social purposes:
- Go through this [introductory tutorial](#) to understand Internet Basics
- Take time with [this short video to learn internet terms](#)
- You can access [LinkedIn Learning](#) which offers a course titled 'Working and collaborating online' which will give you a more in-depth grounding
- This website titled [How to search on Google offers simple tips on searching,](#) scroll to the end for more advanced follow up resources on the site

Score of 17-24: You have good internet skills, but could hone some more advanced skills:
- Find out more about searching at the Open University, with this tutorial on [Advanced Search Techniques.](#)
- [This course on Information Literacy](#) will take your skill to the next level. It is on LinkedIn Learning so you will need to sign in with your student credentials.

Score of 25-32: You are an advanced user of the Internet. You might look to consolidate and [extend your skills and knowledge by scheduling self-study time with](#)

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[the Web Literacy book](#) by Mike Caulfield. An Open Textbook available on several formats for free.

Using files and folders
- Creating files and folders (E) _____
- Copying and moving files into different folders for storage (E) _____
- Locating a file or folder (E) _____
- Storing files in One Drive or on your local computer file system as needed (E) _____
- Being aware of different file formats when saving files (JPEG etc.) _____
- Using the most appropriate format for a given assignment _____
- Compressing large files _____
- Naming files using file naming conventions _____

Score of 8-16: You have limited experience with files and folders and will need to schedule self- study time to be able to fulfil course requirements:
- [Managing and organising your computer files is a tutorial](#) that offers a good grounding
- [You will need to understand how to use One Drive](#) and Microsoft Offers a good Tutorial
- [How to Zip and Unzip Files](#) is a useful skill when you have large files to handle

Score of 17-24: You can manage files and folders adequately but could do with honing your skill level:
- [Managing and organising your computer files is a tutorial](#) that offers a good grounding
- [You will need to understand how to use One Drive](#) and Microsoft Offers a good Tutorial
- [How to Zip and Unzip Files](#) is a useful skill when you have large files to handle

Score of 25-32: You are skilled in the use of files and folders but make sure you keep updated on changes to the operating system and use shortcuts to speed up navigation.

PowerPoint Presentation Skills
- Create and manage a simple presentation with text and images (E) _____
- Delivering a presentation using a computer connected to a screen in class _____
- Insert and format text shape and images _____
- Change slide transition effects _____
- Add header and footer to slides (E) _____
- Put a video into a PowerPoint slide _____
- Use lists (E) _____
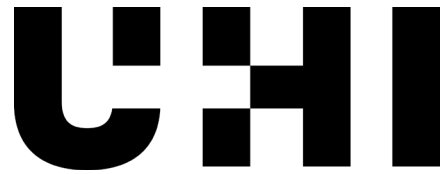
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- Add and record Audio in your presentation _____

Score of 8-16: You are a PowerPoint novice and need to develop this skill:
- This [PowerPoint 101 tutorial for beginners](#) is a good place to start
- You can then move on to [review this Basic Tasks tutorial](#) for creating a PowerPoint Presentation, and practice each several times
- [These short well scaffolded tutorials](#) can offer further skill development

Score of 17-24: You have the basic skills to create a presentation but can always refresh your skills by scheduling in some self-study time. You can log on to LinkedIn Learning and find a course on PowerPoint there that would expand your skills. Or follow this [open course in specific PowerPoint Intermediate Skills](#) from Libre Texts.

Score of 25-32: You are an advanced user of PowerPoint and have the skills to produce high-standard presentations. [A comprehensive shortcut list review](#) may speed up your workflow. You may find [this chapter: PowerPoint beyond](#) the Basics useful. From: ESSENTIAL MICROSOFT OFFICE 365 (Bernard John Poole with Lorrie Jackson, 2020).