



**ECDL**

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## **ECDL Syllabus**

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Syllabus 5.0

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You can find the online version of this ECDL syllabus at [www.ecdl.lu](http://www.ecdl.lu).

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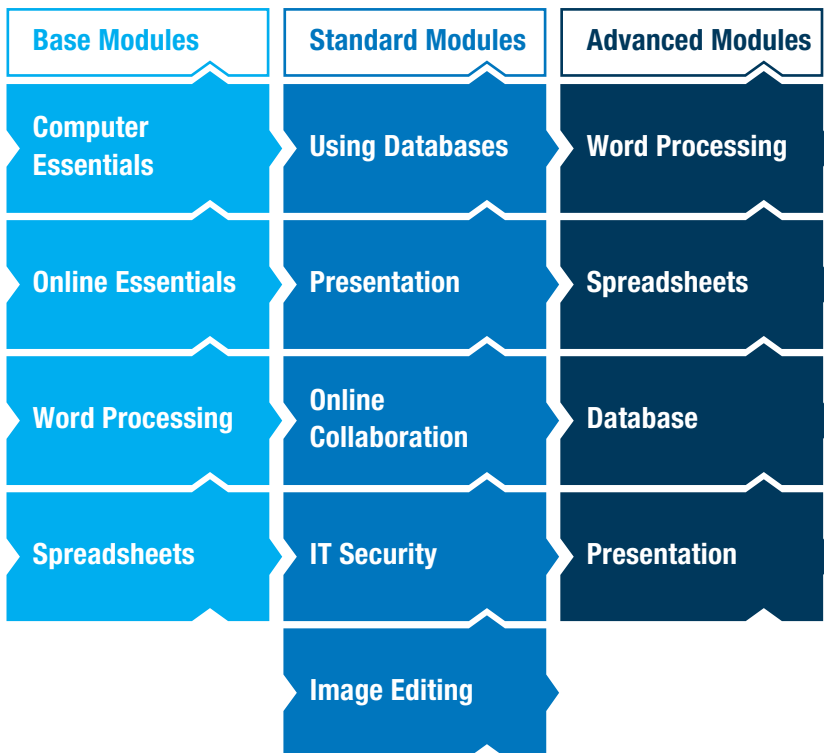
## **ECDL Standard – prove your extensive digital skills**

The ECDL Standard certificate proves that you can use a computer competently and efficiently as well as your extensive practical skills in using common Office programmes and further important applications. The ECDL Foundation has created new modules and updated the test contents according to the latest developments.

This ECDL syllabus describes the knowledge you need to pass ECDL Standard modules. You can also use this booklet as a checklist to find out which skills you still need to acquire. To obtain an ECDL Standard certificate you need to pass all four Base modules plus three Standard modules of your choice. The contents of the ECDL Base modules are listed in the ECDL Base syllabus.

You can get more information on the ECDL Expert Certificate on [www.ecdl.lu](http://www.ecdl.lu).

# ECDL Modules and Certificates



## ECDL Base Certificate



4 Base modules

## ECDL Standard Certificate



4 Base modules

+ 3 Standard modules of your choice

## ECDL Expert Certificate



3 Advanced modules of your choice

# Using Databases

This module requires the candidate to understand the concept of a database and demonstrate competence in using a database.

## Module Goals

Successful candidates will be able to:

- ▶ Understand what a database is and how it is organized and operated
- ▶ Create a simple database and view the database content in various modes
- ▶ Create a table, define and modify fields and their properties; enter and edit data in a table
- ▶ Sort and filter a table or form; create, modify and run queries to retrieve specific information from a database
- ▶ Understand what a form is and create a form to enter, modify and delete records and data in records
- ▶ Create routine reports and prepare outputs ready for distribution

Category	Knowledge Area	Ref.	Knowledge Item
<b>1   Understanding Databases</b>	1.1   Key Concepts	1.1.1	Understand what a database is
		1.1.2	Understand the difference between data and information
		1.1.3	Understand how a database is organized in terms of tables, records and fields
		1.1.4	Know some of the common uses of large-scale databases like: airline booking systems, government records, bank account records, hospital patient details
	1.2   Database Organization	1.2.1	Understand that each table in a database should contain data related to a single subject
		1.2.2	Understand that each field in a table should contain only one element of data
		1.2.3	Understand that field content is associated with an appropriate data type like: text, number, date/time, yes/no
		1.2.4	Understand that fields have associated field properties like: field size, format, default value

Category	Knowledge Area	Ref.	Knowledge Item
		1.2.5	Understand what a primary key is
		1.2.6	Understand what an index is. Understand how it allows for faster data access
	1.3   Relationships	1.3.1	Understand that the main purpose of relating tables in a database is to minimize duplication of data
		1.3.2	Understand that a relationship is built by matching a unique field in one table with a field in another table
		1.3.3	Understand the importance of maintaining the integrity of relationships between tables
	1.4   Operation	1.4.1	Know that professional databases are designed and created by database specialists
		1.4.2	Know that data entry, data maintenance and information retrieval are carried out by users
		1.4.3	Know that a database administrator provides access to specific data for appropriate users
		1.4.4	Know that the database administrator is responsible for recovery of a database after a crash or major errors
<b>2   Using the Application</b>	2.1   Working with Databases	2.1.1	Open, close a database application
		2.1.2	Open, close a database
		2.1.3	Create a new database and save to a location on a drive
		2.1.4	Display, hide built-in toolbars. Restore, minimize the ribbon
		2.1.5	Use available Help functions
	2.2   Common Tasks	2.2.1	Open, save and close a table, query, form, report
		2.2.2	Switch between view modes in a table, query, form, report
		2.2.3	Delete a table, query, form, report
		2.2.4	Navigate between records in a table, query, form
		2.2.5	Sort records in a table, form, query output in ascending, descending numeric, alphabetic order

Category	Knowledge Area	Ref.	Knowledge Item
<b>3   Tables</b>	3.1   Records	3.1.1	Add, delete records in a table
		3.1.2	Add, modify, delete data in a record
	3.2   Design	3.2.1	Create and name a table and specify fields with their data types like: text, number, date/time, yes/no
		3.2.2	Apply field property settings: field size, number format, date/time format, default value
		3.2.3	Create a validation rule for number, date/time, currency
		3.2.4	Understand consequences of changing data types, field properties in a table
		3.2.5	Set a field as a primary key
		3.2.6	Index a field (with, without duplicates allowed)
3.2.7	Add a field to an existing table		
3.2.8	Change width of columns in a table		
<b>4   Retrieving Information</b>	4.1   Main Operations	4.1.1	Use the search command for a specific word, number, date in a field
		4.1.2	Apply a filter to a table, form
		4.1.3	Remove the application of a filter from a table, form
	4.2   Queries	4.2.1	Understand that a query is used to extract and analyse data
		4.2.2	Create a named single table query using specific search criteria
		4.2.3	Create a named two-table query using specific search criteria
		4.2.4	Add criteria to a query using one or more of the following operators: = (Equal), <> (Not equal to), < (Less than), ≤ (Less than or equal to), > (Greater than), ≥ (Greater than or equal to)
4.2.5	Add criteria to a query using one or more of the following logical operators: AND, OR, NOT		
4.2.6	Use a wildcard in a query, * or %, ? or _		
4.2.7	Edit a query: add, modify, remove criteria		



Category	Knowledge Area	Ref.	Knowledge Item
		4.2.8	Edit a query: add, remove, move, hide, unhide fields
		4.2.9	Run a query
<b>5   Objects</b>	5.1   Forms	5.1.1	Understand that a form is used to display and maintain records
		5.1.2	Create and name a form
		5.1.3	Use a form to insert new records
		5.1.4	Use a form to delete records
		5.1.5	Use a form to add, modify, delete data in a record
		5.1.6	Add, modify text in headers, footers in a form
<b>6   Outputs</b>	6.1   Reports, Data Export	6.1.1	Understand that a report is used to print selected information from a table or query
		6.1.2	Create and name a report based on a table, query
		6.1.3	Change arrangement of data fields and headings within a report layout
		6.1.4	Present specific fields in a grouped report by sum, minimum, maximum, average, count, at appropriate break points
		6.1.5	Add, modify text in headers, footers in a report
		6.1.6	Export a table, query output in spreadsheet, text (.txt, .csv), XML format to a location on a drive
	6.2   Printing	6.2.1	Change the orientation (portrait, landscape) of a table, form, query output, report. Change paper size
		6.2.2	Print a page, selected record(s), complete table
		6.2.3	Print all records using form layout, specific pages using form layout
		6.2.4	Print the result of a query
		6.2.5	Print specific page(s) in a report, print complete report

# Presentation

This module requires the candidate to demonstrate competence in using presentation software.

## Module Goals

Successful candidates will be able to:

- ▶ Work with presentations and save them in different file formats
- ▶ Choose built-in options such as the Help function within the application to enhance productivity
- ▶ Understand different presentation views and when to use them, choose different slide layouts and designs and edit slides
- ▶ Enter, edit and format text in presentations. Recognize good practise in applying unique titles to slides
- ▶ Choose, create and format charts to communicate information meaningfully
- ▶ Insert and edit pictures, images and drawn objects
- ▶ Apply animation and transition effects to presentations and check and correct presentation content before finally printing and giving presentations

Category	Knowledge Area	Ref.	Knowledge Item
<b>1   Using the Application</b>	1.1   Working with Presentations	1.1.1	Open, close a presentation application. Open, close presentations
		1.1.2	Create a new presentation based on default template
		1.1.3	Save a presentation to a location on a drive. Save a presentation under another name
		1.1.4	Save a presentation as another file type: Rich Text Format, template, show, image fileformat, version number
		1.1.5	Switch between open presentations
	1.2   Enhancing Productivity	1.2.1	Set user preferences in the application: user name, default folder to open and save files
		1.2.2	Use available Help functions
		1.2.3	Use magnification/zoom tools
		1.2.4	Display, hide built-in toolbars. Restore, minimize the ribbon

Category	Knowledge Area	Ref.	Knowledge Item
<b>2   Developing a Presentation</b>	2.1   Presentation Views	2.1.1	Understand the uses of different presentation view modes: normal view, slide sorter view, outline view, slide show view
		2.1.2	Recognize good practice in adding slide titles: use a different title for each slide to distinguish it in outline view, when navigating in slide show view
		2.1.3	Change between presentation view modes: normal view, slide sorter view, slide show view
	2.2   Slides	2.2.1	Choose a different built-in slide layout for a slide
		2.2.2	Apply an available design template to a presentation
		2.2.3	Change background colour on specific slide(s), all slides
		2.2.4	Add a new slide with a specific slide layout like: title slide, chart and text, bulleted list, table/ spreadsheet
		2.2.5	Copy, move slides within the presentation, between open presentations
		2.2.6	Delete slide(s)
2.3   Master Slide	2.3.1	Insert a graphical object (picture, image, drawn object) into a master slide. Remove a graphical object from a master slide	
	2.3.2	Enter text into footer of specific slides, all slides in a presentation	
	2.3.3	Apply automatic slide numbering, automatically updated date, non-updating date into footer of specific slides, all slides in a presentation	
<b>3   Text</b>	3.1   Handling Text	3.1.1	Recognize good practice in creating slide content: use short concise phrases, bullet points, numbered lists
		3.1.2	Enter text into a placeholder in standard, outline view
		3.1.3	Edit text in a presentation
		3.1.4	Copy, move text within, between presentations
		3.1.5	Delete text
		3.1.6	Use the undo, redo command

Category	Knowledge Area	Ref.	Knowledge Item
	3.2   Formatting	3.2.1	Change text formatting: font sizes, font types
		3.2.2	Apply text formatting: bold, italic, underline, shadow
		3.2.3	Apply different colours to text
		3.2.4	Apply case changes to text
		3.2.5	Align text: left, centre, right in a text frame
	3.3   Lists	3.3.1	Indent bulleted text. Remove indent from bulleted text
		3.3.2	Adjust line spacing before and after bulleted, numbered lists
		3.3.3	Switch between the different standard bullet, number styles in a list
	3.4   Tables	3.4.1	Enter, edit text in a table slide
		3.4.2	Select rows, columns, entire table
		3.4.3	Insert, delete rows and columns
		3.4.4	Modify column width, row height
<b>4   Charts</b>	4.1   Using Charts	4.1.1	Input data to create built-in charts in a presentation: column, bar, line, pie
		4.1.2	Select a chart
		4.1.3	Change the chart type
		4.1.4	Add, remove, edit a chart title
		4.1.5	Add data labels to a chart: values/numbers, percentages
		4.1.6	Change the background colour of a chart
		4.1.7	Change the column, bar, line, pie slice colours in a chart
	4.2   Organization Charts	4.2.1	Create an organization chart with a labelled hierarchy by using a built-in organization chart feature
		4.2.2	Change the hierarchical structure of an organization chart
		4.2.3	Add, remove co-workers, subordinates in an organization chart

Category	Knowledge Area	Ref.	Knowledge Item
<b>5   Graphical Objects</b>	5.1   Insert, Manipulate	5.1.1	Insert a graphical object (picture, image, drawn object) into a slide
		5.1.2	Select a graphical object
		5.1.3	Copy, move graphical objects, charts within the presentation, between open presentations
		5.1.4	Resize, delete graphical objects, charts in a presentation
		5.1.5	Rotate, flip a graphical object
		5.1.6	Align a graphical object relative to a slide: left, centre, right, top, bottom
	5.2   Drawing	5.2.1	Add different types of drawn object to a slide: line, arrow, block arrow, rectangle, square, oval, circle, text box
		5.2.2	Enter text into a text box, block arrow, rectangle, square, oval, circle
		5.2.3	Change drawn object background colour, line colour, line weight, line style
		5.2.4	Change arrow start style, arrow finish style
		5.2.5	Apply a shadow to a drawn object
		5.2.6	Group, ungroup drawn objects in a slide
		5.2.7	Bring a drawn object one level forward, one level backward, to the front, to the back of other drawn objects
		<b>6   Prepare Outputs</b>	6.1   Preparation
6.1.2	Add, remove preset animation effects for different slide elements		
6.1.3	Add presenter notes to slides		
6.1.4	Select appropriate output format for slide presentation like: overhead, handout, on-screen show		
6.1.5	Hide, show slides		
6.2   Check and Deliver	6.2.1		Spell check a presentation and make changes like: correcting spelling errors, deleting repeated words

Category	Knowledge Area	Ref.	Knowledge Item
		6.2.2	Change slide setup, slide orientation to portrait, landscape. Change paper size
		6.2.3	Print entire presentation, specific slides, handouts, notes pages, outline view of slides, number of copies of a presentation
		6.2.4	Start a slide show from first slide, from current slide
		6.2.5	Navigate to next slide, previous slide, specified slide during a slide show

# Online Collaboration

This module sets out concepts and skills relating to the setup and use of online collaborative tools, such as storage, productivity applications, calendars, social media, web meetings, learning environments, and mobile technology.

## Module Goals

Successful candidates will be able to:

- ▶ Understand the key concepts relating to online collaboration and cloud computing
- ▶ Set up accounts to prepare for online collaboration
- ▶ Use online storage and web-based productivity applications to collaborate
- ▶ Use online and mobile calendars to manage and plan activities
- ▶ Collaborate and interact using social networks, blogs, and wikis
- ▶ Schedule and host online meetings and use online learning environments
- ▶ Understand key mobile technology concepts and use features such as e-mail, applications, and synchronisation

Category	Knowledge Area	Ref.	Knowledge Item
<b>1   Collaboration Concepts</b>	1.1   Key Concepts	1.1.1	Recognise that ICT (Information and Communication Technology) can support and promote online collaboration
		1.1.2	Identify the main types of services supporting online collaboration like: cloud computing, mobile technology. Identify the main types of tools supporting online collaboration like: common productivity applications, social media, online calendars, online meetings, online learning environments
		1.1.3	Identify key characteristics of online collaborative tools like: multiple users, real time, global reach, concurrent access
		1.1.4	Outline the benefits of using online collaborative tools like: shared files and calendars, reduced travel expense, ease of communication, enhanced teamwork, global access

Category	Knowledge Area	Ref.	Knowledge Item
		1.1.5	Be aware of the risks associated with using online collaborative tools like: unauthorised access to shared files, insufficient management of version control, malware threats, identity/ data theft, service interruptions
		1.1.6	Recognise the importance of intellectual property rights and the appropriate use of content when using online collaborative tools
	1.2   Cloud Computing	1.2.1	Understand ways in which cloud computing facilitates online and mobile collaboration like: storage of shared documents and files, access to a range of online applications and tools
		1.2.2	Outline the benefits of cloud computing for users like: reduced costs, enhanced mobility, scalability, automatic updates
		1.2.3	Outline the risks of cloud computing like: dependence on provider, data protection and control, potential loss of privacy
<b>2   Preparation for Online Collaboration</b>	2.1   Common Setup Features	2.1.1	Understand that additional applications, plug-ins may need to be installed to use certain online collaborative tools
		2.1.2	Identify common equipment used to support online collaboration like: webcam, microphone, speakers
		2.1.3	Recognise that firewall restrictions may cause access issues for users of a collaborative tool
	2.2   Setup	2.2.1	Download software to support online collaborative tools like: VOIP, IM, document sharing
		2.2.2	Register and/or set up a user account for a collaborative tool. Deactivate, delete/close a user account
<b>3   Using Online Collaborative Tools</b>	3.1   Online Storage and Productivity Applications	3.1.1	Understand the concept of online storage solutions and identify common examples
		3.1.2	Identify the limitations of online storage like: size limit, time limit, sharing restrictions
		3.1.3	Upload, download, delete online files, folders



Category	Knowledge Area	Ref.	Knowledge Item
		3.1.4	Understand that common productivity applications can be accessed via the web. Identify common examples of web-based productivity applications like: word processing, spreadsheets, presentations
		3.1.5	Identify features of web-based productivity applications: allows files to be updated by multiple users in real-time, allows files to be shared
		3.1.6	Create, edit and save files online
		3.1.7	Share, unshare a file, folder to allow other users to view, edit, own a file, folder
		3.1.8	View, restore previous versions of a file
	3.2   Online Calendars	3.2.1	Share a calendar. Grant permission to view, edit a shared calendar
		3.2.2	Show, hide shared calendars
		3.2.3	Use a shared calendar to create an event, recurring event
		3.2.4	Set a reminder for an event
		3.2.5	Invite, uninvite people, resources to an event. Accept, decline an invitation
		3.2.6	Edit, cancel an existing event
	3.3   Social Media	3.3.1	Identify social media tools that support online collaboration like: social networks, wikis, forums and groups, blogs, micro blogs, content communities
		3.3.2	Set up, modify available permissions/privacy options like: read access, write access, user invites
		3.3.3	Find, connect to social media users, groups. Remove connections
		3.3.4	Use a social media tool to post a comment, link
		3.3.5	Use a social media tool to reply to, forward a comment
		3.3.6	Use a social media tool to upload content like: images, videos, documents

Category	Knowledge Area	Ref.	Knowledge Item
		3.3.7	Remove posts from social media. Be aware that permanently deleting posts and photos may be difficult
		3.3.8	Use a wiki to add to or update a specific topic
	3.4   Online meetings	3.4.1	Open, close online meeting application. Create a meeting: time, date, topic. Cancel the meeting
		3.4.2	Invite, uninvite participants, set access rights
		3.4.3	Start, end a meeting
		3.4.4	Share, unshare desktop, files in an online meeting
		3.4.5	Use available chat features in an online meeting
		3.4.6	Use video, audio features in an online meeting
	3.5   Online Learning Environments	3.5.1	Understand the concept of an online learning environment. Identify online learning environments like: Virtual Learning Environments (VLEs) and Learning Management Systems (LMS)
		3.5.2	Understand the features, functions available within an online learning environment like: calendar, noticeboard, chat, assessment records
		3.5.3	Access a course in an online learning environment
		3.5.4	Upload, download a file in an online learning environment
		3.5.5	Use a course activity like: quiz, forum
<b>4   Mobile Collaboration</b>	4.1   Key Concepts	4.1.1	Identify types of mobile devices like: smartphone, tablet
		4.1.2	Understand that mobile devices use an operating system. Identify common operating systems for mobile devices
		4.1.3	Understand the term Bluetooth and its use
		4.1.4	Understand internet connection options available for mobile devices: wireless (WLAN), mobile internet (3G, 4G). Understand associated features of these options like: speed, cost, availability

Category	Knowledge Area	Ref.	Knowledge Item
		4.1.5	Understand key security considerations for mobile devices like: use a PIN, backup content, turn wireless/Bluetooth on/off
	4.2   Using Mobile Devices	4.2.1	Connect to the Internet securely using wireless, mobile technology
		4.2.2	Search the web
		4.2.3	Send, receive e-mail
		4.2.4	Add, edit, remove a calendar event
		4.2.5	Share pictures, videos using options like: e-mail, messaging, social media, Bluetooth
	4.3   Applications	4.3.1	Identify common applications like: news, social media, productivity, maps, games, ebooks
		4.3.2	Understand that applications are obtained from application stores. Identify common application stores for mobile devices
		4.3.3	Search for a mobile device application in an application store. Recognise that there may be purchase, usage costs associated with an application
		4.3.4	Install, uninstall an application on a mobile device
		4.3.5	Update applications on a mobile device
		4.3.6	Use an application on a mobile device like: voice or video communication, social media, map
	4.4   Synchronisation	4.4.1	Understand the purpose of synchronising content
		4.4.2	Set up synchronisation settings
		4.4.3	Synchronise mobile devices with mail, calendar, other devices

# IT Security

This module sets out essential concepts and skills relating to the ability to understand the main concepts underlying the secure use of ICT in daily life and to use relevant techniques and applications to maintain a secure network connection, use the Internet safely and securely, and manage data and information appropriately.

## Module Goals

Successful candidates will be able to:

- ▶ Understand the key concepts relating to the importance of secure information and data, physical security, privacy and identity theft
- ▶ Protect a computer, device or network from malware and unauthorised access
- ▶ Understand the types of networks, connection types and network specific issues including firewalls
- ▶ Browse the World Wide Web and communicate on the Internet securely
- ▶ Understand security issues related to communications including e-mail and instant messaging
- ▶ Back up and restore data appropriately and safely, and securely dispose of data and devices

Category	Knowledge Area	Ref.	Knowledge Item
<b>1   Security Concepts</b>	1.1   Data Threats	1.1.1	Distinguish between data and information
		1.1.2	Understand the term cybercrime
		1.1.3	Understand the difference between hacking, cracking and ethical hacking
		1.1.4	Recognise threats to data from force majeure like: fire, floods, war, earthquake
		1.1.5	Recognise threats to data from: employees, service providers and external individuals
	1.2   Value of Information	1.2.1	Understand the reasons for protecting personal information like: avoiding identity theft, fraud
		1.2.2	Understand the reasons for protecting commercially sensitive information like: preventing theft or misuse of client details, financial information

Category	Knowledge Area	Ref.	Knowledge Item
		1.2.3	Identify measures for preventing unauthorised access to data like: encryption, passwords
		1.2.4	Understand basic characteristics of information security like: confidentiality, integrity, availability
		1.2.5	Identify the main data/privacy protection, retention and control requirements in your country
		1.2.6	Understand the importance of creating and adhering to guidelines and policies for ICT use
	1.3   Personal Security	1.3.1	Understand the term social engineering and its implications like: information gathering, fraud, computer system access
		1.3.2	Identify methods of social engineering like: phone calls, phishing, shoulder surfing
		1.3.3	Understand the term identity theft and its implications: personal, financial, business, legal
		1.3.4	Identify methods of identity theft like: information diving, skimming, pretexting
	1.4   File Security	1.4.1	Understand the effect of enabling/disabling macro security settings
		1.4.2	Set a password for files like: documents, compressed files, spreadsheets
		1.4.3	Understand the advantages and limitations of encryption
<b>2   Malware</b>	2.1   Definition and Function	2.1.1	Understand the term malware
		2.1.2	Recognise different ways that malware can be concealed like: Trojans, rootkits and back doors
	2.2   Types	2.2.1	Recognise types of infectious malware and understand how they work like: viruses, worms
		2.2.2	Recognise types of data theft, profit generating/ extortion malware and understand how they work like: adware, spyware, botnets, keystroke logging and diallers
	2.3   Protection	2.3.1	Understand how anti-virus software works and its limitations
		2.3.2	Scan specific drives, folders, files using anti-virus software. Schedule scans using anti-virus software

Category	Knowledge Area	Ref.	Knowledge Item
		2.3.3	Understand the term quarantine and the effect of quarantining infected/suspicious files
		2.3.4	Understand the importance of downloading and installing software updates, anti-virus definition files
<b>3   Network Security</b>	3.1   Networks	3.1.1	Understand the term network and recognise the common network types like: local area network (LAN), wide area network (WAN), virtual private network (VPN)
		3.1.2	Understand the role of the network administrator in managing the authentication, authorisation and accounting within a network
		3.1.3	Understand the function and limitations of a firewall
	3.2   Network Connections	3.2.1	Recognise the options for connecting to a network like: cable, wireless
		3.2.2	Understand how connecting to a network has implications for security like: malware, unauthorised data access, maintaining privacy
	3.3   Wireless Security	3.3.1	Recognise the importance of requiring a password for protecting wireless network access
		3.3.2	Recognise different types of wireless security like: Wired Equivalent Privacy (WEP), Wi-Fi Protected Access (WPA), Media Access Control (MAC)
		3.3.3	Be aware that using an unprotected wireless network can allow wireless eavesdroppers to access your data
		3.3.4	Connect to a protected/unprotected wireless network
	3.4   Access Control	3.4.1	Understand the purpose of a network account and how it should be accessed through a user name and password
		3.4.2	Recognise good password policies, like: not sharing passwords, changing them regularly, adequate password length, adequate letter, number and special characters mix

Category	Knowledge Area	Ref.	Knowledge Item
		3.4.3	Identify common biometric security techniques used in access control like: fingerprint, eye scanning
<b>4   Secure Web Use</b>	4.1   Web Browsing	4.1.1	Be aware that certain online activity (purchasing, financial transactions) should only be undertaken on secure web pages
		4.1.2	Identify a secure website like: https, lock symbol
		4.1.3	Be aware of pharming
		4.1.4	Understand the term digital certificate. Validate a digital certificate
		4.1.5	Understand the term one-time password
		4.1.6	Select appropriate settings for enabling, disabling autocomplete, autosave when completing a form
		4.1.7	Understand the term cookie
		4.1.8	Select appropriate settings for allowing, blocking cookies
		4.1.9	Delete private data from a browser like: browsing history, cached internet files, passwords, cookies, autocomplete data
		4.1.10	Understand the purpose, function and types of content-control software like: internet filtering software, parental control software
	4.2   Social Networking	4.2.1	Understand the importance of not disclosing confidential information on social networking sites
		4.2.2	Be aware of the need to apply appropriate social networking account privacy settings
		4.2.3	Understand potential dangers when using social networking sites like: cyber bullying, grooming, misleading/dangerous information, false identities, fraudulent links or messages
<b>5   Communications</b>	5.1   E-Mail	5.1.1	Understand the purpose of encrypting, decrypting an e-mail
		5.1.2	Understand the term digital signature
		5.1.3	Create and add a digital signature
		5.1.4	Be aware of the possibility of receiving fraudulent and unsolicited e-mail

Category	Knowledge Area	Ref.	Knowledge Item
		5.1.5	Understand the term phishing. Identify common characteristics of phishing like: using names of legitimate companies, people, false web links
		5.1.6	Be aware of the danger of infecting the computer with malware by opening an e-mail attachment that contains a macro or an executable file
	5.2   Instant Messaging	5.2.1	Understand the term instant messaging (IM) and its uses
		5.2.2	Understand the security vulnerabilities of IM like: malware, backdoor access, access to files
		5.2.3	Recognise methods of ensuring confidentiality while using IM like: encryption, non-disclosure of important information, restricting file sharing
<b>6   Secure Data Management</b>	6.1   Securing and Backing Up Data	6.1.1	Recognise ways of ensuring physical security of devices like: log equipment location and details, use cable locks, access control
		6.1.2	Recognise the importance of having a back-up procedure in case of loss of data, financial records, web bookmarks/history
		6.1.3	Identify the features of a back-up procedure like: regularity/frequency, schedule, storage location.
		6.1.4	Back up data
		6.1.5	Restore and validate backed up data
	6.2   Secure Destruction	6.2.1	Understand the reason for permanently deleting data from drives or devices
		6.2.2	Distinguish between deleting and permanently destroying data
		6.2.3	Identify common methods of permanently destroying data like: shredding, drive/media destruction, degaussing, using data destruction utilities



# Image Editing

This module sets out essential concepts and skills relating to the ability to understand the main concepts underlying digital images and to use an image editing application to enhance images, apply effects, and prepare an image for printing and publishing.

## Module Goals

Successful candidates will be able to:

- ▶ Know about the main concepts of using digital images and understand graphic format options and colour concepts
- ▶ Open an existing image, save an image in different formats, and set image file options
- ▶ Use built-in options such as displaying toolbars, palettes to enhance productivity
- ▶ Capture and save an image, use various selection tools, and manipulate images
- ▶ Create and use layers, work with text, use effects and filters, and use drawing and painting tools
- ▶ Prepare images for printing or publishing

Category	Knowledge Area	Ref.	Knowledge Item
<b>1   Imaging Concepts</b>	1.1   Digital Images	1.1.1	Identify common uses of digital images like: web and print publishing, distribution by e-mail and mobile phone, home printing, digital photo frames
		1.1.2	Understand the terms pixel, resolution and identify the key features of a digital image: composed of discrete pixels, represented digitally in binary code
		1.1.3	Understand the terms lossy, lossless image file compression
		1.1.4	Understand the term copyright and the implications for image use. Understand the terms royalty-free images and rights-managed images
	1.2   Graphic Formats	1.2.1	Understand the terms raster and vector graphics and distinguish between them. Identify common raster (jpeg, gif) and vector (svg, eps) formats

Category	Knowledge Area	Ref.	Knowledge Item
		1.2.2	Recognize proprietary digital image editing application formats: psd, psp, xcf, cpt
	1.3   Colour Concepts	1.3.1	Understand the term colour model and recognize common colour models: RGB, HSB, CMYK, grayscale
		1.3.2	Understand the terms colour palette, colour depth
		1.3.3	Understand the terms hue, saturation, colour balance
		1.3.4	Understand the terms contrast, brightness, gamma
		1.3.5	Understand the term transparency
<b>2   Image Capture</b>	2.1   Capturing Images	2.1.1	Save an image from a digital camera to a location on a drive
		2.1.2	Use the print screen facility to capture a full screen, active window
		2.1.3	Save an image from an image library, web page to a location on a drive
		2.1.4	Open a scanning application and scan an image: preview, set scanning parameters, scan, save
<b>3   Using the Application</b>	3.1   Image Creation	3.1.1	Open, close an image editing application. Open, close image files
		3.1.2	Create a new image file and set options: colour model, size, resolution, background colour
		3.1.3	Create a new image file from clipboard
		3.1.4	Switch between open image files
		3.1.5	Save an image to a location on a drive. Save an image under another name to a location on a drive
		3.1.6	Save, export an image as another file type like: jpeg, gif, tiff, png
	3.2   Settings	3.2.1	Set background colour, foreground colour
		3.2.2	Set grid properties: units, horizontal spacing, vertical spacing, colour

Category	Knowledge Area	Ref.	Knowledge Item
	3.3   Enhancing Productivity	3.3.1	Set basic options/preferences in the application like: transparency, grid settings, measurement units
		3.3.2	Use available Help functions
		3.3.3	Use magnification/zoom tools
		3.3.4	Use the undo, redo command. Use the undo history
		3.3.5	Display, hide built-in toolbars, palettes, windows
<b>4   Working with Images</b>	4.1   Selection	4.1.1	Select an entire image, layer(s)
		4.1.2	Set selection tool properties: relationship between multiple selections, feathering, anti-aliasing, width, height
		4.1.3	Select part of an image using selection tools: rectangular, elliptic, magic wand, magnetic lasso, freehand image
		4.1.4	Inverse a selection
		4.1.5	Save a selection, load a saved selection
	4.2   Image Manipulations	4.2.1	Change the canvas size of an image
		4.2.2	Resize an image in pixels, measurement units
		4.2.3	Crop an image
		4.2.4	Copy, move image(s), selection within an image
		4.2.5	Rotate, mirror an image, selection within an image
	4.3   Layers	4.3.1	Define and understand the term layer
		4.3.2	Create, copy, delete a layer
		4.3.3	Set layer properties: name, hide, show, lock, opacity, blending mode
		4.3.4	Arrange, merge, link, flatten layers
		4.3.5	Transform layer(s): scale, rotate, flip, move, trim
		4.3.6	Convert a drawn object to a raster layer
		4.3.7	Create an animated gif from layers

Category	Knowledge Area	Ref.	Knowledge Item		
	4.4   Text	4.4.1	Add, edit, delete text		
		4.4.2	Copy, move text		
		4.4.3	Align text: left, centre, right, justified		
		4.4.4	Apply text formatting: font sizes, font types, font colour		
		4.4.5	Apply a text warp		
	4.5   Effects and Filters	4.5.1	Apply artistic, distortion effects: pixelate, emboss, wind, ripple, twirl, desaturate		
		4.5.2	Apply blur effects: gaussian, motion		
		4.5.3	Apply lighting effects: lighting, flare		
		4.5.4	Apply adjustments: brightness-contrast, hue-saturation, colour balance		
		4.5.5	Apply sharpen, unsharpen mask		
		4.5.6	Apply red eye reduction		
<b>5   Drawing and Painting</b>	5.1   Drawing Tools	5.1.1	Add a line to an image: straight line, free drawn line, curves. Set, modify line weight, style and colour		
		5.1.2	Add a shape to an image: rectangle, ellipse, n-shaped polygon. Set, modify line, fill style and colour		
	5.2   Painting Tools	5.2.1	Pick up a colour value with the dropper		
		5.2.2	Fill a portion of an image with the gradient tool, selecting opacity/transparency, radial, linear, position, rotation		
		5.2.3	Colour a portion of an image with the paint-brush tool, selecting colour, shape, size		
		5.2.4	Erase a portion of an image with the eraser tool, selecting its shape and size		
		5.2.5	Fill a portion of an image with colour using the paint bucket tool		
		5.2.6	Clone a portion of an image using a clone tool, selecting size, opacity		
		<b>6   Prepare Outputs</b>	6.1   Setup	6.1.1	Preview an image
				6.1.2	Select appropriate colour depth, resolution, image size, graphic format for web, screen, print use

Category	Knowledge Area	Ref.	Knowledge Item
	6.2   Print	6.2.1	Change print output orientation: portrait, landscape. Change paper size
		6.2.2	Print an image to an installed printer using defined options, default settings





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