



ICT FUNDAMENTALS

Syllabus



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Introduction

Competition, innovation and social cohesion increasingly depend on the strategic and effective use of new information and communication technologies. This requires competence, creativity, and awareness on the part of those who use ICT tools every day.



Obtaining and certifying these skills through a recognised, objective system facilitates mobility. A commonly-accepted 'language' in this sector provides the opportunity for everyone to think about their own ICT competence, and, more importantly, to display these skills on their CV. When applying for jobs this gives candidates something extra, something that employers are undoubtedly looking for. The skills outlined in this document represent a 'structure' for defining e-competence that could be transferred onto the Europass Curriculum. *From the Introduction to e-Competence Framework for ICT Users.*



The e-Competence Framework for ICT Users was developed by CEN, the European Committee for Standardisation, based on a series of EU rules and policies, including:

- [European e-Skills Summit Declaration](#);
- [Decision 2318/2003/EC](#) by the European Parliament and Council to adopt a multiannual programme for the effective integration of information and communication technologies (ICT) in education and training systems in Europe (eLearning Programme);
- [e-Skills in Europe: Towards 2010 and Beyond](#). A summary of the European e-Skills Forum report presented at the European e-skills Conference;
- European Commission communication on e-Skills [in the 21st Century: Fostering Competitiveness, Growth and Jobs](#);
- [Digital agenda for Europe](#).

The e-competence framework provides an overall outline of the digital skills that an average user of computers, the internet and new information and communication technologies should possess. **The use of a shared language to describe skills and proficiency levels makes it easily understandable throughout Europe and beyond.** The tool was created to facilitate the immediate assessment of IT skills in varying environments and for different groups of people. These include students, employees, managers, Human Resource departments, those working in educational institutions, policy makers and those in the public sector.

Our **User Programme** makes direct reference to classifications provided by the **e-Competence Framework for ICT Users (e-CF)**, making it relevant and applicable in all sectors: it is the first programme of its kind to make full use of the framework's structure, rather than simply replicating the principle ideas. The **User Programme**, more precisely, assesses and certifies intermediate ICT skills, as described in the summary table of the **e-Competence Framework for ICT Users – Part 2: User Guidelines**.

The **User Programme** is a great way to objectively demonstrate the ability to correctly and maturely use ICT tools in a school or university environment, at work, or on a personal level.

The programme takes into account the independent nature of different software and hardware producers, and fulfils all criteria for interoperability and neutrality.

Study Center EIPASS

Our method

Going beyond the tired 'explanation, activity, test' method, we propose a new way to link and describe the content of the modules, based on that used in the **e-Competence Framework for ICT Users – Part 2: User Guidelines**.

The programme is the obvious choice for those who need to build their ICT skills and obtain a certification. For every topic, we have provided a reference framework which consists of:

- a basic definition of the skill;
- everything the User must know in about the topic, the theory or *knowledge*.
- the *skills* related to the aforementioned theory that a certified User must possess.

Procedures and tools

In order to prepare for the test, the candidate has full access to the online training and support available in your reserved area on DIDASKO platform.

To pass the exam, the candidate must be able to correctly answer at least 75% of the 30 questions for each module. The idea is that every module represents a specific skill. Due to the links between these skills, the candidate is free to choose the order in which they want to move through the modules.

MODULE

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What does a certified EIPASS User know how to do?

A certified User knows how to describe the concepts of software and hardware, understands the logic which underlies the fundamental workings of a computer, is aware of how to manage files and folders, how to install drivers and how to use system utilities.

He/she is familiar with the basic principles and problems associated with information security, particularly regarding the legal and social issues caused by the widespread use of computers and the Internet.

The User knows how important the safe and healthy use of computers is. He/she knows which parts of a machine are reusable and/or recyclable, and has a green attitude to technology.

Contents of the module

Information and Communication technology

- The principles of Information and Communication technology.
- Computer hardware
- Computer software
- Turning the computer on and off

Desktop and settings

- The desktop, its applications and their function
- Program management
- Installation and uninstallation

Organisation of data and information

- Files and folders
- File management
- File properties

Internet and networks

- The concept of networks, the different types, (LAN, MAN, WAN), and the essential elements needed to connect to the internet.
- Network connections

IT security

- What it means to safeguard a system
- Updates
- Backup copies

Safe and green IT

- Principles of energy saving
- Using the PC in a healthy way
- Improved accessibility

1 | INFORMATION AND COMMUNICATION TECHNOLOGY

The certified User knows the basics of computer software and hardware and the general context of Information and Communication technology. The User is familiar with using basic applications on a computer.

Knowledge		Skills	
A certified User knows about...		A certified User can...	
1.1	The principles of Information and Communication technology	1.1.1	Define the concept of ICT, understand the difference between information and data
		1.1.2	Understand the workings of Personal Computer, explain the difference between the hardware and the software
1.2	Computer hardware	1.2.1	Identify the parts of a standard PC: system unit, monitor, keyboard, mouse, speakers, external hard disk, printer
		1.2.2	Identify the different types of a system unit: desktop, horizontal desktop, mini desktop, integrated desktop, Two-in-one-tablet, portable
		1.2.3	Identify the components of a system unit: optical unit and relative media (CD and DVD), space/slot for expansion, memory card slot and relative media (SD cards), access buttons, ventilation grills, fans, I/O panel, plugs, switches
		1.2.4	Identify the most common portals or I/O connectors
		1.2.5	Identify the internal components of a PC: power supply unit, motherboard, processor (how to measure speed and what this can tell us about the PC's power), the mass memory unit
		1.2.6	Identify the most widely-used I/O appliances, set mouse options, distinguish the various parts of a monitor and a printer, connect and set-up a printer with default settings, Identify Bluetooth and use it to connect appliances to the PC
		1.2.7	Distinguish between computer memory (RAM) and internal & removable mass storage systems, know what a Byte is and its function, understand how a PC identifies and manages an external appliance, understand how to verify how much memory is left

1.3	Computer software	1.3.1	Distinguish between operating systems and programs whilst being aware of the different operating systems of PCs and mobile devices
		1.3.2	Distinguish between the different programs available: App, applications, drivers, malware and utilities
		1.3.3	Understand, and be able to choose, according to requirements, between different software licenses (EULA, proprietary, shareware, freeware, open source)
1.4	Turning the computer on and off	1.4.1	Log in systematically
		1.4.2	Shut down the PC or activate one of the other options (Sleep, restart, log off, lock, hibernate)

2 | DESKTOP AND SETTINGS

The User knows how to identify the key features of the desktop and comfortably navigate around it, with special attention given to the taskbar. He/she also knows how to install and uninstall programs, and perform common operations.

Knowledge		Skills	
A certified User knows about...		A certified User can...	
2.1	The desktop, its applications and their various functions	2.1.1	Identify the utilities in the taskbar, using all of the tools (Start button, Cortana/online guide, pinned items, notification area), with particular reference to the notification centre and date and time, language, backgrounds and colours, screen resolution and volume settings
		2.1.2	Understand the concept and function of icons. Select them, move them, rename them, and create and manage links/alias
		2.1.3	Understand the concept and function of windows and identify the various parts. Can manage their various icons, move from one window to the next, reduce all active windows to icon, view full screen
2.2	Program management	2.2.1	Activate an application, activate tablet mode (<i>Start screen</i>), pin an item to the taskbar and find an application using its name
2.3	Installation and uninstallation	2.3.1	Install programs from the internet
		2.3.2	Install programs from an external media
		2.3.3	Close a program that is not responding
		2.3.4	Uninstall a program
		2.3.5	Take a screenshot

3 | ORGANISING DATA AND INFORMATION

The User is aware of how to carefully and logically manage files and folders, and recognise their distinguishing features to be able to keep the desktop and therefore, the computer, organised. He/she is familiar with file properties and knows how to modify those in the *General* tab of the *Properties* dialog box.

Knowledge		Skills	
A certified User knows about...		A certified User can...	
3.1	Files and folders	3.1.1	Understand the definition of and identify, create, save and name files. Understand the concept of an extension and how to view it
		3.1.2	Understand the concepts of folder, default folder, sub-folder; use the Home folder to organise files. Create a folder
		3.1.3	Identify the hierarchical structure of files and folders, as described by Windows
3.2	File management	3.2.1	Select and deselect a single file, scattered files, a file sequence and a group of files
		3.2.2	Manipulate files: copy and move with the mouse or with the context menu commands, rename, rename grouped files, delete, recover, search, compress and decompress, distinguish between a copy and a link/alias
3.3	File properties	3.3.1	Open and analyse the General tab from the Properties window
		3.3.2	Change the order of files in a folder, using all the filters available (name, date, type, dimension)

4 | INTERNET AND NETWORKS

The User knows about the principles and tools that underpin the function of networks. He/she understands the basics of the workings of the Internet and is aware of good practice of connecting automatically and safely, choosing the most suitable option for his/her needs.

Knowledge		Skills	
A certified User knows about...		A certified User can...	
4.1	The concept of networks, the different types, (LAN, MAN, WAN), and the essential elements needed to connect to the internet	4.1.1	Identify the standard hardware components of a network (appliances, NIC, gateway/router, modem, cables)
		4.1.2	Define an ISP and the different ways of connecting to the internet (analogue, ADSL, Wi-Fi, hotspot, Wi-Max) along with the units of measure that transform data into networks
		4.1.3	Explain how the ISP connects the PC to the internet and has knowledge of the PPP and TCP/IP protocols
		4.1.4	Explain how to choose the best ISP according to needs, taking into account signal, bandwidth, proposed plan and technical assistance options

4.2	Network connections	4.2.1	Explain how a cabled Internet connection works and how to activate it
		4.2.2	Explain how a Wi-Fi connection works and how to activate it
		4.2.3	Check the network type, using the <i>Network and Sharing Centre</i>
		4.2.4	Disconnect

5 | IT SECURITY

The User knows the importance of data protection and privacy while using computers. They also know how to identify the most common security measures and how to use all the tools available to update the PC and its components. This topic also addresses the importance of managing a well-thought out backup system.

Knowledge		Skills	
A certified User knows about...		A certified User can...	
5.1	Protecting a system	5.1.1	Apply the available functions from the <i>Action Centre/Security and maintenance</i>
		5.1.2	Configure Windows Firewall
		5.1.3	Explain how to protect the computer using Windows Defender
		5.1.4	Make use of the notifications in <i>User Account Control</i>
5.2	Updates	5.2.1	Understand the importance and define the difference between an update and an upgrade, understand the significance of a patch
		5.2.2	Update Windows
5.3	Backup copies	5.3.1	Configure the <i>File History</i> feature of Windows 10 to recover previous versions of a file
		5.3.2	Recover files from a backup

6 | GREEN AND SAFE COMPUTER USE

The User knows how to use a computer and its appliances in healthy way without putting one's health at risk, paying attention to posture and ergonomics. He/she will know how to activate power-saving options, how to recycle computers and appliances, or parts of them, and to manage accessibility options.

Knowledge		Skills	
A certified User knows about...		A certified User can...	
6.1	Principles of energy saving	6.1.1	Explain how the composing materials of a PC are environmentally damaging and how it is possible to reduce energy consumption
		6.1.2	Apply energy-saving options
		6.1.3	Configure an energy saving plan
		6.1.4	Use good practice to save energy
		6.1.5	The most common methods for recycling electronic products, the computer as WEEE and how to contact WEEE centres in order to follow correct disposal procedures.

6.2	Good practice for using a computer in a healthy way	6.2.1	Find an ergonomic work position: a comfortable place for the back and legs, correct shoulder, arms, wrists and finger position, reducing neck torsions and bending, take measures to reduce eye fatigue
		6.2.2	Identify and manage the low-impact forces (dynamic, static, contact) that the body is subject to whilst we work with computers
		6.2.3	Explain how to reduce the effect of low-impact forces
		6.2.4	Take breaks and vary activity to ensure maximum productivity and limit damage
6.3	Options to increase accessibility	6.3.1	Explain how to manage these options in Windows' <i>Accessibility</i> pane
		6.3.2	Define the concept of assisted technologies and describing the most widespread tools associated with them.



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