REPUBLIQUE DU CAMEROUN

Paix – Travail – Patrie

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MINISTERE DES ENSEIGNEMENTS SECONDAIRES

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INSPECTION GENERALE DES ENSEIGNEMENTS

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INSPECTION DE PEDAGOGIE CHARGEE DE L'ENSEIGNEMENT DES SCIENCES ET TECHNOLOGIES DU TERTIARE

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REPUBLIC OF CAMEROON

Peace – Work – Fatherland

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MINISTRY OF SECONDARY EDUCATION

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INSPECTORATE GENERAL OF EDUCATION

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INSPECTORATE OF PEDAGOGY IN CHARGE OF TERTIARY SCIENCES AND TECHNOLOGIES

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FIRST CYCLE TST

SUBJECT: INFORMATION TECHNOLOGY

CLASS (ES): FORM 1 COMMERCIAL, FORM 2 COMMERCIAL,

SPECIALTY: ALL TST

SUBJECT: INFORMATION TECHNOLOGY	**MINIMUM WEEKLY HOURS: 2H**
CLASS: FORM ONE	**MINIMUM YEARLY HOURS: 44H**
SPECIALTY : ALL TST	**COEFFICIENT: 2**

TOPIC	COMPETENCES	CONTENT	PERFORMANCE CRITERIA	RECOMMENDATIONS
COMPUTER SYSTEMS 1	Presented with a computing environment, learners identify and state the roles of the main components of the environment.	**Computing environment;** •Identify the components of a computing environment; •State the role of the main components in a computing environment; **Users of a computer system.** •Describe the different types of users (end user; secretary, programmers, computer repairer, …) **Data and information.** •Differentiate between data and information. •Identify the different forms of data (numbers, characters, images, video, sound)	Learners identify components and state their roles and also prescribe computing needs to different computer users	The components of a computing environment: hardware, software, user. Recommended context to consider during evaluation or problem situations are: computer laboratory, home computing environment, office computing environment, cybercafé, secretariat, …
	Presented with a variety of computers and their components, learners correctly identify the types of computers involved and their respective components, and effectively use the main input devices.	**Characteristics of computer system** •State the characteristics of computers. •Describe the main components of a computer. •State the different types of computers •Explain the advantages and disadvantages of each type of computer. •Outline the different types of each computer component.	Learners classify computers with respect to computer characteristics such as speed, size, technology, and select the best for specific purpose.	Main components of computer system: keyboard, monitor, mouse, system unit. Types of mice: mechanical and optical, Types of keyboards: QWERTY, AZERTY, Types of monitors: CRT, LCD,

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		• Manipulate the main components (keyboard, mouse, touch screen)		touchscreen; Types of system unit: tower, desktop
	Provided with a situation with factors related to setting up a computer laboratory, learners identify and enumerate the needs and rules of a school computer laboratory.	**Working in a computer laboratory** • Identify the elements of the computer laboratory. • State the main role of each element of the computer laboratory • Identify good behaviours to adopt when working in the computer laboratory. • State precautions to take when using the computer laboratory. • State the importance of rules in a computer laboratory.	Learners list the requirements of a laboratory as well as the prescribed behaviour of users of a laboratory	Standard elements of the computer laboratory: computers, printer, chairs, tables, projector, networking devices, fire extinguisher, generator, etc. Rules of the use of computer room should be placed at the entrance to the room
	Given a situation with factors related to the evolution of computers, learners explain computer evolution and classify computers based on technology used. The explanation should bring out the inventor, date, and name of device.	**Classification of computers** • Trace the history of computers by identifying the main computing device, the date, and the inventor • Classify computers based on application, and size. • Describe the different computer generations and for each, identify the main technology used.	Learners classify computers according to date, and technology used	State names of computer scientist and dates of their discoveries. State different generations and their characteristics.

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	Presented with domains of life and specific computing technologies, learners describe the use of computers in these domains. The description should involve an example of technologies used in the domain.	**Computer applications** • Describe some general applications of computers in homes and school e.g., create documents, leisure, research, etc. • Describe application of computers in specific domains in commercial domain. • List embedded systems and IoT that can be used at home, in school and in specific domains. • Explain general computer applications in school, e.g., documentation, teach/study, production of report cards, etc.	Learners describe the use of computers in various domains.	No details required. Only state how computer is used to carry out activities in the domain.
	Given peripheral devices and system units, learners set up correctly and power on a computer.	**Peripheral devices** • Identify common peripheral devices such as USB stick, external hard drive, memory card, monitor, mouse, keyboard, printer, charger, headset, … • State the function of a given peripheral device. **Computer ports** • Identify computer ports (USB port, PS2, Power port, VGA port, HDMI port, audio port, memory card port, …) • Connect devices to their appropriate ports. **Booting a computer** • Identify the power button. • Explain the boot process.	Learners classify devices according to their roles and select the appropriate peripheral devices for a given task.	Sample computer should be use for demonstrations.

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	Given a set of tasks, learners identify appropriate application software needed to carry out each task.	**Types of software** • State and give examples of system software. • State and give examples of application software. • Distinguish between system software and application software. • State and give examples of specialist software in specific domains in commercial education, e.g., in accounting, manufacturing, design, etc. • State examples of task that can be carried out by a given specialist software.	Learners differentiate the various types of software and carry out tasks using the appropriate software	More examples should be discovered through search engines by assignment
	Provided with a situation where files are being created or transferred into a computer, learners use basic features of an operating system to organise files logically.	**User interfaces** • Identify features of a GUI operating system. • Access the start menu. • Arrange items on the desktop with respect to a specific criterion. **Files and Folders** • Manipulate files and folders in a GUI OS.	Learners identify and work with the features of a GUI	GUI features: icons, menu, mouse pointer, windows, task bar, desktop, explorer etc.
	Given a situation with issues related to searching information from the internet, learners use a web browser and hyperlinks to navigate between	**Navigating the web** • Start a web browser • Start and access a search engine • Enter a website address to view a specific website and navigate between pages and sites using the hyperlinks. • Find information on the web	Learners work on the Net using the appropriate navigation tools to carry out research	Students should regularly be given home assignments which will require the use of telephones to carry out research and make reports. Assignment should

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	web pages and find information.			involve the use of search engines.
DIGITAL CITIZENSHIP 1	Given a computing environment, learners adopt responsible behaviours in such an environment	**Ethics in computing** • State the importance of computer ethics appropriately. • List the three major issues of concern in the study of computer ethics correctly. • Give examples of scenarios highlighting ethical issues appropriately. • Examine ethical ways of using technology correctly. • Outline the 10 commandments of computer ethics	Learners work in a computer system or laboratory under the guide of ethical rules	The commandment of computer ethics should be printed and placed on walls in the computer room.
	Given a computing environment, learners adopt appropriate safety measures in the environment.	**Computers and the workplace** • Examine the risk of electricity shock and measures of prevention vividly. • Explain measures to avoid and how to contain a fire or flood incidence. **Computer and health related issues** • Explain repetitive strain injury (RSI) and causes. • State methods of preventing RSI.	Learners take necessary safety measure in a computer laboratory to avoid disaster and health problems.	The computer room of the school should be evaluated by school and security recommendations outlined
MODULE 3: PROBLEM SOLVING AND CODING	Given a problem, learners develop strategies to solve problems logically and adapt common solutions to similar problems.	**Problem solving** • State the expected outcome of a problem. • List resources that are needed to solve a problem. • Break a problem into smaller simple sub-problems.	Learners analyse problems and state the necessary requirements and steps that can be taken to solve the problem	Problems could be taken from puzzles, areas of figures, setting up a computer etc.

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		• Combine solutions of sub-problems to solve a bigger problem. • Count number of steps in a strategy to solve a problem and decide on the best strategy. • Evaluate other solutions.		
	Given a situation that requires writing a program, learners create scenarios or programs using a block programming tool.	**Block programming environment.** • Outline features of block programming environments. • Create a simple program in a block programming environment (Scratch, mBlock).	Learners work in block programming environment to present scenarios.	Simple block programs such as scenarios to move an object from one position to another could be done.
MODULE APPLICATIONS AND PRACTISE 1	Given text that is not in digital format, learners transform the text into an editable digital format with the help of word a processor. The text produced should match the text given.	**Word processors** • State examples of word processors. • Launch appropriate tool. • Create text in a word processor (typing, transcribing) • Perform basic file manipulation in a word processor (save, create a copy, open an existing file, print a file). • Save a document.	Learners select installed word processor in a computer to create documents	Accessing applications should be done through the start menu and short cut on the desktop. Carry out identification of icons of applications
	Provided with an open file that can be printed, and connected printer configured as default, learners demonstrate ability to access the	**File formats** • Identify files that can be printed. • Access the print interface (keyboard shortcut, print icon, file menu, etc.) **Printing files** • Open print interface.	Learners select files based on their format for printing	Only file formats of applications of word processing, spreadsheet, executable, pictures and videos should be taught.

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	print interface and print the file.	• Identify print button. • Print a file.		
	Given tabular data, learners represent it on a spreadsheet and perform simple addition and subtraction operations on the data using spreadsheet formulae. Data entered should be follow the structure and flow of the tabular representation given.	**Spreadsheet.** • State examples of spreadsheet software • Launch a spreadsheet. • Identify rows, columns, and their headers. • Identify Cells and their respective addresses. • Enter data in a cell. • State generic symbol to use when entering a formula. • Identify cells to use in a formula. • Identify different ways of representing a given operator. • Perform addition and subtraction involving two cells • Save a document.	Learners select spreadsheet software to carry out calculations	Emphasis should be made on the equality sign in a formula. Carry out simple arithmetic operations such as =3+6, =A3+B4, =C8-D8

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CLASS: FORM TWO	**MINIMUM YEARLY HOURS: 44H**
SPECIALTY : ALL TST	**COEFFICIENT: 2**

TOPICS	COMPETENCES	CONTENT	PERFORMANCE CRITERIA	RECOMMENDATIONS
COMPUTER SYSTEMS 2	Given a set of hardware, learners classify devices into appropriate categories.	**Computer Hardware** •State the main role of input, output, processing, and storage devices. •Identify input, output, processing, and storage devices. •State the function of a given input device. •State the function of a given output device. •Outline examples of primary and secondary storage respectively. •Outline differences between impact and non-impact printers. •Outline differences between primary and secondary storage. •State the main components of the CPU.	Learners classify computer devices of a computer according to types and outline their functions	Recall: Types of mice, keyboards, and monitors; Processing devices: CPU and RAM; Output devices: Monitor, printer. Input devices: mouse, keyboard. Impact printer: dot matrix Non-impact printers: ink jet, laser printer. Components of CPU: registers, bus, CU, ALU. Primary storage: memories Secondary storage: hard disk, CD-ROM, flash disk.
	Given a situation presenting computer faults, learners propose basic corrective and preventive maintenance actions to solve or stop such	**Computer maintenance** •Classify computer faults into hardware and software issues. •Differentiate between corrective and preventive maintenance. •Match basic computer faults to an action that can prevent it.	Learners identify computer faults and state measures to correct the fault.	Faults: improper connection, boot error, bad monitor or system unit. Low voltage, software (OS) error. Keyboard error.

TOPICS	COMPETENCES	CONTENT	PERFORMANCE CRITERIA	RECOMMENDATIONS
	issues. The action proposed should be logical and pertinent.	• Identify the symptoms of a given computer fault. • State a possible solution to correct a given computer fault.		
	Provided with a situation with factors related to users with disabilities, learners identify appropriate technologies for a given disability within a context.	**Assistive technologies** • Explain the concept of assistive technology. • Outline examples of assistive technologies. • State the role of a given assistive technology. • Match a given technology to an appropriate disability.	Learners prescribe appropriate technologies to situations of disabilities.	Special technologies include: braille devices, track ball, hearing-aids, speech recognition
	Given a situation, learners select system software that are in line with the situation.	**Types of system software** • Explain the concept of operating systems. • Outline types of operating system. • Outline the functions of an operating system. • Give examples of each type of operating system. • Explain the concept of utility software. • State the function of a given type of utility software. • State the purpose of device drivers.	Learners differentiate between different system software and state their importance	Details not needed. The function or description should be done in one sentence.
	Provided with a situation related to the access and use of the internet, learners	**Evolution of the internet** • Outline major landmarks in the history of the internet.	Learners select appropriate software tools, ensuring	Needs to connect a computer to the internet is the modem or smart phone.

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	assemble the necessary and adapted tools needed to access the internet and use basic features of a browser correctly.	•Outline elements influencing the growth of the internet. **Connecting to the Internet.** •State elements needed to access the internet. •Choose appropriate ISP in a given context. **Browsing on the internet** •Use a browser to access a webpage. •Identify the menu button of a browser. •Create a tab and switch between tabs. •Bookmark a page. •Organise bookmarks. •View browsing history.	connectivity for safe navigation to carry out research.	
	Provided with a situation with factors related to communication and collaboration, learners select and use the most appropriate tool for the situation.	**Internet services** •Differentiate between communication and collaboration. •Outline basic features of a videoconferencing, chat, and email tool. •Create an email account. •Use an email to send, read and attach a file. •Use a chat tool to send and receive text messages. •Use a chat tool to send non-text messages. •Respond to a specific message in a conversation.	Learners study features of communication and collaboration software tools and use them to communicate	

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		• Create a videoconference using appropriate tool. • Use basic features of a conferencing tool. • Use a word processor in the cloud to collaborate.		
	Given a situation in relation to encoding data, learners apply the right encoding technique to represent numbers and characters correctly.	**Number systems** • Explain the concept of encoding. • State the main number system used in computing. • Explain how to count in base 2, 8 and 16. • Convert from base 10 to base 2 and vice versa. **Coding schemes** • State character encoding schemes. • Appreciate ASCII character encoding scheme.	Learners represent the first fifteen decimal numbers in binary and perform conversion between different number systems. They also appreciate the ASCII coding system	Numbers to be considered should be from 0 to 15 in base 10. Conversion can be done through place value method.
	Given time units, learners compare and convert from one unit to another.	**Units of time measurement** • Arrange units of time in a particular order. • Identify units of time • Convert from one unit of time to another	Learners identify the different units of time and know how to covert from one unit to the other	Time measurement: microseconds, milliseconds and seconds

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	Given storage units, learners compare and convert from one unit to another.	**Units of memory measurement** •Arrange units of storage in a particular order. •Identify units of storage •Convert from one unit of storage to another	Learners identify the different units of memory and know how to covert from one unit to the other	Memory measurement: GB, MB, Kb, and Bytes
DIGITAL CITIZENSHIP 2	Presented with a situation with factors related to protecting data, learners propose appropriate protection mechanisms to fight against loss and unauthorised access.	**Data security** •Explain the concept of unauthorised access appropriately. •Outline techniques used to protect data from unauthorised access correctly. •Explain the concept of backup. •Compare and contrast cloud backup from local backup. •State advantages and disadvantages of cloud backup over local backup clearly.	Learners appreciate vulnerabilities of computer system and prescribe measures of prevention	Backup devices: external hard disk, DVDs, Flash disks, tapes.

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	Provided with a situation with issues related to digital identities, digital footprints, and reputation, learners recommend best practices to deal with or prevent such a situation. The practices should be pertinent and coherent to the situation.	**Managing digital identities and footprints** • Explain the concept of digital identity and footprint correctly. • Outline best practices to manage multiple digital identities. • State ways users create digital footprints. • Differentiate passive from active digital footprints. • Outline ways of minimising digital footprints. • State positive and negative effects of digital footprints. • Discuss ways of protecting online reputation.	As learners work online, they learn to protect their being monitored	View navigation history and delete after online activities.

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	Given a problem with factors related to the credibility of information, learners detect the credibility and reliability of common sources of information and digital content and recommend trustworthy sources to access information and digital content.	**Evaluating the credibility and reliability of sources of information** • Identify the source of a given information. • Identify sponsored content on the internet. • Explain ways of verifying the credibility of a source. • Determine trustworthy sources of information and digital content. • Explain why secured websites and digital distribution platform reliable sources of information can be. • Appraise credible and reliable information from fake news.	Learners evaluate the links and other sources of an information to determine if the source is credible, trustworthy.	Explain http and https, Domains of international organisation and nations.

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PROBLEM SOLVING AND CODING 2	Learners develop strategies to solve problems in a logical way.	**Algorithms** •State the expected output for a given problem. •List resources that are needed to solve a problem. •Break a problem into smaller simple sub-problems. •Combine solutions of sub problems to solve the bigger problem. •Write simple algorithms. •Use an algorithm to solve similar problems •Identify control structures used in a solution. •Evaluate other solutions	Learners analyse a problem, break it into solvable units and state the steps that can be taken to solve the problem	Statements could be written in plain English. Only simple problems should be given such as problem taken from cookery, locating a shop in town, areas of figures, etc.
	Given a project or problem related to coding, learners with the guidance of the teachers use features of a block programming tool to produce code that responds to the project or situation.	**Block programming.** Work in block programming environments (Scratch, Blockly, mBlock) •Write programs using a block programming tool.	Learners represent scenarios using block programming tools	Programs could be scenarios that show the movement of objects from one position to another.

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APPLICATIONS AND PRACTISE	Given text that is in a digital or non-digital format, and formatting characteristics, learners produce an editable text with the help of a word processor that respects all the formatting constraints.	**Basic formatting in word processing** •Differentiate editing from formatting features. •Identify formatting features (changing font face, font size, line spacing, font colour, apply elements of emphasis: bold, italic, underline, alignment, …) •Apply a given formatting feature on a word processor.	Learners create content with prescribed requirements using work processors.	Documents in hard copy is given to learners who have to reproduce it. Typing skills should be programmed in other tasks.
	Given a file with constraints on what should be printed, learners demonstrate ability to manipulate features of the print interface and print such that it respects the constraints given.	**Printing of files** •Match element of print interface to a given task. •Use common features of the print interface. •Produce correct print out.	Learners, print assorted files selecting specific setups	

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	Given tabular data with task to perform on the data, learners represent it on a spreadsheet and apply appropriate arithmetic operations on the data using spreadsheet formulae.	**Spreadsheet** •State the purpose of a cell address and a formula. •State an advantage of the formula extension feature of spreadsheets. •Match an operation to a given task •Perform basic arithmetic operations on spreadsheets. •Extend a formula to other cells.	Learners use spreadsheet software to carry out basic arithmetic operations	Spreadsheet formula should include operations of + and – and functions of SUM and PRODUCT.
	Given an image file and descriptions on what should be done on it, learners transform the image such that it is coherent with the descriptions using an image editing tool.	**Image editing** •Identify common image editing software. •Identify common image editing features. •State the purpose of common image editing features. •Launch an image editor. •Perform basic image editing.	Learners use image editing software to create images.	Students should be given hard copy image files to recreate using the appropriate software