SYNAPSE
GLOBAL INSTITUTE

Connecting Minds. Transforming Futures.

FUNDAMENTAL ICT SKILLS

A Practical Digital Skills Handbook

Synapse Global Institute

Connecting Minds. Transforming Futures.

FUNDAMENTAL ICT SKILLS

A Practical Digital Skills Handbook

Synapse Global Institute

First Edition • 2026

© 2026 Synapse Global Institute •

Copyright

© 2026 Synapse Global Institute. All rights reserved.

Published by Synapse Global Institute.

Website: www.sgi.ac

First edition, 2026.

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means without prior written permission from the publisher, except for brief quotations used for review, teaching or scholarly reference where permitted by law.

This book is an educational and professional-development resource. Software interfaces, hardware specifications and security practices evolve over time; readers should use current documentation and organisational policies where appropriate. Cybersecurity activities should be carried out only in authorised environments and within applicable legal and ethical boundaries.

Product and company names mentioned for illustration remain the property of their respective owners. Their inclusion does not imply endorsement.

Preface

Fundamental ICT Skills brings together the essential concepts and practical competencies needed to work confidently with computers in contemporary study, office and business environments. The book begins with computer foundations and hardware, then develops software and productivity-application skills before moving into networking, shared resources and data security.

The eleven chapters are organised as a progressive learning journey. Each chapter combines clear explanations with comparison tables, practical activities, examination-focused cues, practice questions, answer guidance, revision tools and mastery checks. The intention is to help readers understand why a digital tool or control is appropriate rather than memorising isolated definitions.

Throughout the book, emphasis is placed on accurate terminology, safe handling of technology, practical judgement and the ability to distinguish closely related concepts. The final chapter integrates the complete learning journey through practical competency checks and a timed practice assessment.

How to Use This Book

Begin each chapter with the learning objectives and examination focus. These establish the concepts and practical skills that should be mastered before moving on.

Read the explanatory sections for meaning rather than memorising isolated terms. Use the comparison tables, worked reasoning and practical activities to connect ICT concepts to realistic digital-workplace situations.

Attempt the practice questions before consulting the answers and explanations. Use the rapid-revision sheets, glossaries and mastery checklists for retrieval practice, then return to any topic where your explanation or application remains uncertain.

The book is cumulative. Later chapters assume familiarity with earlier concepts, particularly the input-process-output-storage cycle, hardware roles, software classification and safe file-management practice. Periodic revision across chapters is therefore encouraged.

For cybersecurity topics, keep all practical work defensive, authorised and controlled. The purpose is to recognise threats, select appropriate controls and apply safe recovery practices.

Contents

Computer Foundations, Generations and Classification 1
- Learning Objectives 1
- Examination Focus 1
- Suggested Study Sequence 2
- Start with the central idea 2
- Key terms at a glance 2
- The generation idea 4
- One device can have more than one valid classification 7
- Read the instruction word first 9
- A five-step method for MCQs 10
- High-value memory anchors 10
- Common mistakes to avoid 10
- Structured-answer discipline for conceptual mastery 11
- Short conceptual drills 15
- Classification worksheet guide 16
- Structured drill guide points 17
- One-page recap 18
- Mastery checklist 18
- Glossary 18

Computer Hardware and Peripheral Operation 19
- Learning Objectives 19
- Examination Focus 19
- Suggested Study Sequence 20
- Hardware means the physical components 20
- Input devices convert user actions or source data into machine-readable form 21
- The keyboard is both a data-entry device and a command device 22
- The mouse translates hand movement into pointer movement 23
- Output devices communicate results to people or other systems 24
- A printer converts digital output into hard copy 25
- The CPU executes instructions and coordinates processing 26
- Memory and storage are related but not identical 27
- Common connections 28
- Read the negative word before reading the options 29
- Practice Questions 30
- Answers and explanations 33
- Hardware identification station 35
- Keyboard and mouse competency checklist 35
- Printer demonstration checklist 35
- Applied business scenarios 36
- Structured-answer revision 36
- High-value memory anchors 36
- Common mistakes to avoid 37
- Chapter Mastery Checklist 37
- Glossary 38

Five-minute retrieval drill....39
Software, Operating Systems and File Management....40
Learning Objectives....41
Examination Focus....41
Suggested Study Sequence....42
Software is the set of instructions that makes hardware useful....42
System software controls and supports the computer environment....42
Application software helps the user perform a task....43
Utility programs maintain, protect and organise the system....44
Computer programming languages express instructions for program development....45
The operating system manages computer resources....46
User interfaces determine how people interact with the operating system....47
File management keeps information organised and usable....47
Professional file-management discipline....49
High-value exam traps for Chapter 3....49
Practice Questions....50
Answers and explanations....54
Structured revision questions....56
Practical competency assessment....57
Rapid Revision Sheet....57
Mastery checklist....58
Glossary....59
Word Processing for Business Documents....61
Learning Objectives....62
Examination Focus....62
Suggested Study Sequence....62
Word processing software turns text into a professional document....62
Document work follows a simple create-edit-format-review-output cycle....63
Text selection is the starting point for many editing and formatting commands....64
Character formatting controls the appearance of selected text....65
Paragraph formatting controls alignment, spacing and structure....66
Page layout controls the physical arrangement of the document....66
Proofing features help improve language quality and consistency....66
Document features that recur in examination questions....67
Tables organise information into rows and columns....67
Professional business documents depend on consistency....68
Guided laboratory: produce a professional business memorandum....69
High-value exam traps for Chapter 4....70
Worked exam reasoning....70
Objective Practice....72
Answer guide and explanations....76
Structured revision questions....77
Practical Competency Assessment....77
Rapid revision sheet....78
Chapter Mastery Checklist....79
Glossary....79

Spreadsheet Skills, Formulas, Functions and Charts 81
Learning Objectives 82
Examination Focus 82
Suggested Study Sequence 82
A spreadsheet organises data for calculation, analysis and presentation 82
Key spreadsheet workspace features 83
Accurate data entry is the foundation of a reliable worksheet 84
Formatting improves readability without changing the underlying value 85
A formula is an equation created by the user 85
Cell references link formulas to worksheet data 86
Functions are predefined formulas 86
Guided practical: build a sales-and-expenses worksheet 87
Charts and graphs convert worksheet data into visual information 88
Worked examination reasoning 88
Multiple-Choice Practice 89
Answer guide and explanations 93
Structured revision questions 93
Practical Competency Assessment 94
Rapid revision sheet 95
Chapter Mastery Checklist 95
Glossary 96
Presentation Software and Computerised Accounting Applications 98
Learning Objectives 99
Examination Focus 99
Suggested Study Sequence 99
Presentation software communicates ideas through a sequence of slides 99
Typing and formatting text on slides 100
Presentation views change how slides are displayed and managed 101
Transitions and animations are presentation effects with different targets 102
Running and controlling a slide show 102
Printing hand-outs 102
Guided practical: create a short business presentation 103
Computerised accounting software records and processes accounting data 103
Basic accounting data capture 104
Guided practical: supervised accounting-software data capture 104
Examination Reasoning and Common Traps 105
Practice Questions 106
Answers and Explanations 109
Mid-Book Consolidation: Chapters 1 to 5 111
Practical Competency Checklist 113
Rapid revision sheet 113
Glossary 114
Computer Networking Fundamentals, Types and Devices 115
Learning Objectives 116
Examination Focus 116
Suggested Study Sequence 116

A computer network connects two or more devices so that they can communicate....116
Advantages and disadvantages of computer networks....116
Network types are commonly distinguished by geographical scope....117
Core Network Devices....117
A simple office network....118
CAT 6 and the RJ-45 connector....118
Additional Network Devices: NIC, Modem and Repeater....118
Network Topologies....118
Network Performance Terms....119
Guided practical: classify, identify and connect....119
Examination Reasoning and Common Traps....120
examination-style Chapter 7 practice questions....121
Answers and explanations....124
Structured revision questions....126
Practical competency assessment....127
Rapid revision sheet....128
Chapter Mastery Checklist....128
Glossary....128
User Accounts and Shared Network Resources....130
Learning Objectives....131
Examination Focus....131
Suggested Study Sequence....131
User accounts identify users and connect them to permitted resources....131
Administrator and standard-user accounts....132
A controlled user-account creation activity....132
Shared network resources: folders, files and printers....132
Controlled access connects a user account to a resource....133
Shared folders....133
Shared files and file-access settings....133
Network printers....133
Account Verification....134
Password History....134
Servers and Peer-to-Peer Sharing....134
Guided practical: account and resource-access laboratory....134
Worked exam reasoning....135
Common examination traps....136
examination-style practice questions....136
Answers and explanations....140
Structured revision questions....142
Practical competency assessment....143
Rapid revision sheet....143
Chapter Mastery Checklist....144
Glossary....144
Data Threats and Core Computer Control Measures....146
Learning Objectives....147
Examination Focus....147

Suggested Study Sequence....147
Threat recognition: identify the clue before choosing the control....147
Distributed denial of service (DDoS)....148
Man-in-the-Middle (MitM)....148
Social engineering....148
Malware and spyware....148
Password attacks....149
Advanced persistent threats (APT)....149
Core control measures....149
Threat-to-control matching matrix....150
Guided practical: safe incident-recognition and response worksheet....151
Worked exam reasoning....151
Common examination traps....152
examination-style practice questions....152
Answers and explanations....156
Structured revision questions....158
Practical competency assessment....159
Rapid revision sheet....160
Chapter Mastery Checklist....160
Glossary....161
Detection, Prevention, Digital Forensics, Backup and Restoration....162
Learning Objectives....163
Examination Focus....163
Suggested Study Sequence....163
The Security-Control Continuum....163
Intrusion detection systems (IDS)....164
Intrusion prevention systems (IPS)....164
Honeypots....164
Computer forensics....164
Backtracing and counterattacking: conceptual treatment only....165
Backup and restoration procedures....165
Guided authorised practical: backup, restore and verify....165
Security-control selection practice....167
Worked exam reasoning....167
Common examination traps....167
examination-style practice questions....167
Answers and explanations....172
Structured revision questions....174
Practical competency checklist....174
Rapid revision sheet....174
Glossary....175
Integrated Revision and Practice Assessment....176
Learning Objectives....177
Practice-Assessment Pacing....177
Core distinctions to retrieve instantly....178
Computer generations....178

Classification framework 178
Hardware by function 179
Memory and storage 179
Peripheral-operation checkpoints 179
Software classification 180
Operating system and file management 180
Application-software recall grid 180
Network types 181
Network devices and media 181
Topology and network resources 181
Threat recognition 182
Control measures 182
Backup and restoration 183
Final practical competency checklist 184
Use your score diagnostically 194
Error-log method 194
Last-mile recall list 194

CHAPTER 1

Computer Foundations, Generations and Classification

This chapter establishes the vocabulary and conceptual foundations needed for the rest of the book. It develops a clear understanding of computer systems, the progression of computer generations and the principal ways computers are classified.

Chapter 1 Roadmap
A practical, exam-oriented foundation for learners

This book is designed to make Chapter 1 conceptually clear and examination-ready. It follows the learning framework sequence: core ICT terminology, the five computer generations, and classification of computers by size, type and purpose. It also converts recurring examination patterns and recurring assessment themes into focused explanations, worked scenarios and examination-style practice.

PRACTICE ASSESSMENT FORMAT: Examination practice in this book culminates in a 50-question multiple-choice practice assessment that may be attempted in two hours. Older assessment formats used structured or mixed approaches. For that reason, this book prioritises current MCQ technique while retaining selected structured drills to strengthen understanding.

Learning Objectives

- Define the core terms used in computing and distinguish hardware, software, programs and ICT.
- Describe the main characteristics and progression of the five computer generations.
- Classify computers by size, type and purpose and justify the classification of common devices.

Examination Focus

Question pattern	What the learner must be able to do
Definition recognition	Selecting the BEST description of a computer, program, information or ICT-related term.
Generation technology	Matching vacuum tubes, transistors, integrated circuits, VLSI/microprocessors and AI-related capabilities to the correct generation.
Generation characteristics	Identifying which statement belongs - or does not belong - to a particular generation.
Classification by capability	Distinguishing microcomputers, minicomputers/midrange systems, mainframes and supercomputers.
Classification by operation	Distinguishing analogue, digital and hybrid computers.
Classification by purpose	Distinguishing general-purpose, special-purpose and embedded computer systems.

© 2026 Synapse Global Institute. All rights reserved.

Question pattern	What the learner must be able to do
Question-word discipline	Responding correctly to BEST, NOT, EXCEPT, TRUE and FALSE stems rather than answering only from keyword recognition.

Suggested Study Sequence

1. Begin with a short terminology diagnostic: computer, computing, computer system, hardware, software, program and ICT.
2. Build a simple input-process-output-storage concept map before expanding the meaning of a computer system.
3. Construct the five-generation timeline using the technology sequence: vacuum tubes -> transistors -> integrated circuits -> microprocessors/VLSI -> AI-oriented systems.
4. Use familiar devices and business scenarios to classify computers by size/capability, type of data handled and purpose.
5. Close with a timed MCQ drill, correction clinic and the classification worksheet in this book.

Computer Foundations
The vocabulary that controls the rest of Fundamental ICT Skills

Start with the central idea

A computer is an electronic device that accepts data as input, processes that data under the control of a program, can store data and results, and produces meaningful output. In examination questions, the defining idea is not merely that a computer stores information or performs calculations; it transforms data into useful information by following instructions.

STUDY CUE: When several options are partly true, prefer the option that captures the complete idea: electronic device + data input + processing under instructions + information output.

Key terms at a glance

Term	Study-ready meaning
Data	Raw facts, symbols, measurements or observations that have not yet been organised into a meaningful result.
Information	Processed or organised data that has meaning and can support a decision or action.
Computer	An electronic device that accepts data, processes it under program control, stores data/results and produces information.
Computing	The use and study of computer-based methods, systems and resources to process data, solve problems and perform tasks.
Computer system	An organised combination of hardware, software, data, users/people, procedures and communication resources working together.
Hardware	The physical, tangible components of a computer system.

© 2026 Synapse Global Institute. All rights reserved.

Continue learning with SGI

You have reached the end of this sample: the first 13 pages of the handbook.

Purchase the full handbook to continue reading and access all chapters.

Purchase the full handbook

Synapse Global Institute

Connecting Minds. Transforming Futures.

www.sgi.ac