CompTIA®

CertMaster Learn Tech+

FC0-U71

COURSE GUIDE AND TRANSITION MAPPINGS

Contents

About the Course

Learning Philosophy

The course is designed using a **learning progression model** that optimizes both information acquisition and skill development related to product learning objectives and job requirements. This learning progression model includes the following steps, which are repeated throughout a specific learning product:

1. Contextualization (Inquiry and Reflection)
2. Elaboration (Models and Explorations)
3. Relevance (Practice and Feedback)
4. Agency (Contextualized Application)
5. Mastery (Artifacts and Demonstrable Evidence of Learning)

Text, Video, and Other Media

How information is presented to students affects their ability to absorb information for the first time, review information they might have forgotten or not fully understood, and find answers to specific questions they may have.

The course was written with a **text-first, media-supported** mindset. Rather than wrapping all instruction into videos or relying on text alone to convey information, the course content is a mix of text, video, and graphics. This allows for:

- Flexibility in the speed learners work through the content. Students who have more experience can go through it faster, students who are newer can work through it slower.
- Shorter, more targeted media. By combining text and media together to explain a topic, graphics or video content can rely on the context to jump into the meat of the instruction. This means less time in videos watching introductions or setting the stage, and a greater emphasis on the core content being taught in the video.
- Better flow of content. Mixing text and video content together allows for the transition between the two to be more seamless.
- Easier searching and reviewing of the content. Instruction locked in a video is difficult to find on review without already knowing where to look or rewatching the entire video.

- Better accessibility. By avoiding text-based content in a video and instead having the text directly on the page, the content is accessible to screen readers, browser scaling, and other assistive technologies.

This instructional approach is a shift for returning instructors and students. Instructors from the *CertMaster Learn and CompTIA Labs ITF+* will experience a much richer media experience for students as much more video content than before is available. Instructors from the *TestOut IT Fundamentals Pro* course will notice a more integrated learning experience, with most video content moving from the course outline to living in line with text and graphics.

Course Organization

The course is organized into topics, labs, and assessments. These are grouped into **lessons**, which are organized around similar subjects or a discrete job task. Related lessons are grouped into **modules**. Note that this terminology is different from the previous *CertMaster Learn and CompTIA Labs ITF+* course (which labeled them Lessons and Topics) and from the previous *TestOut IT Fundamentals Pro* course (which called them Chapters and Sections).

Labs

Hands-on practice and experience are essential parts of the learning experience. The course uses multiple lab platforms to build student confidence in completing hands-on activities and progress to attempting more challenging tasks.

Labs run simulations of hardware and operating systems. Simulated labs are used for basic and emerging tasks and scenarios. Simulations load quickly and provide a stable environment with defined completion paths.

Some labs use the new **Network Modeler** to provide a visual topology for students to observe, configure, and design networks. Network appliances and hosts added to the topology can be configured via simulated operating systems and software.

Interactives

Intermittent in the course are interactive examples in line with the instructional text. These experiences are short, quick experiences that give students a chance to see a newly learned idea or concept in action. Examples may include:

- Seeing a principle or concept in action.
- Changing something and seeing how that changes other elements on-screen.
- Finding the right tools or buttons to accomplish a short and specific task.

These experiences are ideal for giving students a chance to interact with core concepts in the topic that are abstract or difficult to practice in a lab environment.

Assessments

Each lesson in the course has a **Lesson Review** assessment. Lesson Reviews test students' ability to recall and apply the knowledge acquired through the study of the learning material in that lesson.

Each module in the course has a **Module Quiz** assessment. Module Quizzes test students' ability to recall and apply the knowledge acquired through the study of the learning material.

Intermittent throughout the course are **Checkpoint Review** assessments, which provide students a chance to review content and concepts from all modules up to that point. This spaced repetition of learning reinforces prior knowledge and helps solidify student understanding before moving on to other topics.

Exam Practice

Appendix B is devoted to comprehensive practice for the CompTIA Network+ (N10-009) exam. There are three different types of practice assessments.

The **Exam Practices** align with a single domain from the exam objectives. Questions and labs are pulled from the course that map to that specific exam domain. The score report at the end of the exam shows exam objectives where the student performed well or poorly, allowing for targeted study.

If these exams are repeated, different questions will appear for students. This allows students to practice areas where they feel weaker. Each Exam Practice has 20 items in a random order and an 80% passing score.

The **Skills Practice** assessment is a comprehensive, skills-based practice assessment that uses simulation labs from the course as items. Where the domain Exam Practice assessments practices are primarily knowledge-based, the Skills Practice is designed to allow students to demonstrate skills and abilities.

The Skills Practice assessment also functions as a practice competency assessment.

The **Practice Test** is a full practice certification exam. Like the actual certification exam, it includes 75 questions and has a 60-minute limit. The practice test is a good way to measure exam readiness and help students prepare for skills like time management or other exam-day pressures.

Competency Assessment

Instructors can assign their students the **Competency Assessment**. This is a performance-based assessment that uses simulated labs as items to have students demonstrate skills in key tasks associated with the course material. This is the equivalent of the old *TestOut Pro Certification* from the *TestOut IT Fundamentals Pro* course. Students who pass the competency assessment will be issued a certificate of Competency in Technology Fundamentals. This assessment is commonly used by instructors as a comprehensive, skills-based final exam for their students.

Tools for Instructors

The course is supported by additional resources available through the CertMaster learning platform (previously called LabSim).

Instructors can view **reports** to check on individual students or see trends for the entire class. This makes it easy to identify topics that need more attention or move on early if everyone is getting it.

All student progress is automatically recorded into the **integrated gradebook**, making grades and scoring a breeze.

Instructors can create and assign their own **custom quizzes** from questions and simulation labs in the course.

Institutions and instructors can easily **manage their courses** through rostering, temporary access, invite students, license management, student view, and LMS integrations.

The **Instructional Strategies Toolkit** includes expanded support and intentional guidance around best practices for skills-based technology instruction and teaching with CompTIA products. The toolkit includes:

- **Platform and Module Resources:** A platform overview, professional development videos, instructional videos, lesson plans, worksheets, and handouts.
- **PowerPoint Presentation Slides**: A complete set of PowerPoint slides is provided to facilitate the class.
- **Course Pacing Guide:** Examples of schedules for different course lengths, whether courses are continuous or offered separately across a multisession series.

Outline Mapping to Previous Courses

CertMaster Learn Tech+ FC0-U71	CertMaster Learn for ITF+ (Exam FC0-U61)	TestOut IT Fundamentals Pro 2.1
Module 1: Understanding Tech Basics	Lesson 1: Common Computing Devices	Chapter 2: Information Technology Basics
Module 2: Data and Privacy	Lesson 22: Using Access Controls Lesson 23: Behavioral Security Concepts	Chapter 10: Cybersecurity
Module 3: Internet Technologies	Lesson 17: Secure Web Browsing Lesson 18: Using Shared Storage	Chapter 5: Internet Technologies
Module 4: Cybersecurity	Lesson 20: Security Concerns Lesson 21: Using Best Practices	Chapter 10: Cybersecurity
Module 5: Networking	Lesson 15: Networking Concepts Lesson 16: Connecting to a Network	Chapter 6: Networking
Module 6: Applications and Software	Lesson 7: Using Apps	Chapter 4: Computer Software
Module 7: Operating Systems	Lesson 2: Using a Workstation Lesson 3: Using an OS Lesson 4: Managing an OS Lesson 14: Using File Systems	Chapter 4: Computer Software
Module 8: Hardware	Lesson 10: System Components Lesson 11: Using Device Interfaces Lesson 12: Using Peripheral Devices Lesson 13: Using Storage Devices	Chapter 3: Computer Hardware
Module 9: Databases	Lesson 6: Using Data Types and Units Lesson 9: Using Databases	Chapter 7: Databases
Module 10: Coding	Lesson 8: Programming and App Development	Chapter 8: Programming
Module 11: The Future of Tech		Chapter 9: Information Systems

Certification Exam Objective Updates

Domains and Weighting

The CompTIA Tech+ FC0-U71 exam objectives have a similar domain structure to the previous version of the exam (ITF+ FC0-U61):

Tech+ FC0-U71 Exam Domains	ITF+ FC0-U61 Exam Domains
1.0 IT Concepts and Terminology (13%)	1.0 IT Concepts and Terminology (17%)
2.0 Infrastructure (24%)	2.0 Infrastructure (22%)
3.0 Applications and Software (18%)	3.0 Applications and Software (18%)
4.0 Software Development Concepts (13%)	4.0 Software Development (12%)
5.0 Data and Database Fundamentals (13%)	5.0 Database Fundamentals (11%)
6.0 Security (19%)	6.0 Security (20%)

The principal change is decreasing the weightings of IT Concepts and Terminology, Software Development and Database Fundamentals in favor of the Infrastructure and Applications and Software domains. It should also be noted that the Software Development domain was updated to clarify that the domain is at a conceptual level, and the Database Fundamentals domain was updated to include data concepts as well as databases.

Objectives Mapping

Each numbered objective is expanded by illustrative subobjective or content example bullet lists. Considering the objective and the range of content examples, *ITF+* objectives can be mapped approximately to *Tech+* equivalents.

Some objectives have been formally identified as new content in the objectives:

- 2.6 Compare and contrast virtualization and cloud technologies.
- 3.5 Identify common uses of artificial intelligence (AI).

In the following table, detailed differences between the Tech+ FC0-U71 and ITF+ FC0-U71 exam objectives are highlighted. Pay close attention to where Bloom's taxonomy of an objective is changed.

In the Tech+ column, **bold** highlighting indicated a change of objective verb that shift the Bloom's taxonomy level or change in scope. In the ITF+ column, *italics* indicates a change in scope.

Tech+ FC0-U71 Exam Objectives	Corresponding ITF+ FC0-U61 Exam Objective(s)
1.1 **Explain** the basics of computing.	1.3 *Illustrate* the basics of computing *and processing*.
1.2 **Identify** notational systems.	1.1 *Compare and contrast* notational systems.
1.3 Compare and contrast common units of measure.	1.5 Compare and contrast common units of measure.
1.4 Explain the troubleshooting methodology.	1.6 Explain the troubleshooting methodology.
2.1 **Explain** common computing devices and their purposes.	2.6 **Compare and contrast** common computing devices and their purposes.
2.2 Explain the purpose of common internal computing components.	2.3 Explain the purpose of common internal computing components.
2.3 Compare and contrast storage types.	2.5 Compare and contrast storage types.
2.4 Given a scenario, **install and configure** common peripheral devices.	2.2 Given a scenario, *set up and install* common peripheral devices *to a laptop/PC*.
2.5 **Compare and contrast** common types of input/output device interfaces.	2.1 *Classify* common types of input/output device interfaces.
2.6 Compare and contrast virtualization and cloud technologies.	N/A
2.7 Compare and contrast common Internet service types.	2.4 Compare and contrast common Internet service tyles.
2.8 **Identify** basic networking concepts.	2.7 *Explain* basic networking concepts.
2.9 **Explain** the **basic capabilities** of a small wireless network.	2.8 *Given a scenario, install, configure, and secure a basic* wireless network.
3.1 **Identify** components of an OS.	3.2 *Compare and contrast* components of an operating system.
3.2 Explain the purpose of operating systems.	3.1 Explain the purpose of operating systems.
3.3 Explain the purpose and proper use of software.	3.3 Explain the purpose and proper use of software.
3.4 Given a scenario, configure and use web browser **features**.	3.5 Given a scenario, configure and use web browsers.
3.5 Identify common uses of artificial intelligence (AI).	N/A
4.1 Compare and contrast programming language categories.	4.1 Compare and contrast programming language categories.
4.2 **Identify** fundamental data types and their characteristics	1.2 *Compare and contrast* fundamental data types and their characteristics.

Tech+ FC0-U71 Exam Objectives	Corresponding ITF+ FC0-U61 Exam Objective(s)
4.3 Explain the purpose and use of programming concepts.	4.3 Explain the purpose and use of programming concepts.
4.4 **Identify** programming organizational techniques and **logic concepts**.	4.2 *Given a scenario*, use programming organizational techniques and *interpret* logic.
5.1 Explain the value of data and information.	1.4 Explain the value of data and information.
5.2 Explain database concepts and the purpose of a database.	5.1 Explain database concepts and the purpose of a database.
5.3 Compare and contrast various database structures.	5.2 Compare and contrast various database structures.
5.4 **Explain basic data backup concepts**.	6.7 *Explain business continuity concepts.*
6.1 **Explain fundamental security concepts and frameworks**.	6.1 *Summarize confidentiality, integrity and availability concerns.*
6.2 Explain methods to secure devices and **security** best practices.	6.2 Explain methods to secure devices and best practices.
6.3 Explain password best practices.	6.5 Explain password best practices.
6.4 Identify common **use cases** for encryption.	6.6 Explain common *uses* of encryption.
6.5 Given a scenario, **configure security settings** for a **small** wireless network.	2.8 Given a scenario, *install, configure, and secure a basic* wireless network.

Note the following objectives from the ITF+ FC0-U61 exam did not directly map to any of the objectives for the new Tech+ FC0-U71 exam:

- 3.4 Explain methods of application architecture and delivery models.
- 3.6 Compare and contrast general application concepts and uses.
- 5.3 Summarize methods used to interface with databases.
- 6.3 Summarize behavioral security concepts.
- 6.4 Compare and contrast authentication, authorization, accounting, and non-repudiation concepts.

While these topics are not included in the objectives, some have been added as content examples supporting other objectives. Others have been removed completely from the scope of the exam.