

# IT Essentials 5.0

## Opportunity

The Internet is changing life as we know it—bringing new economic and social opportunities to communities throughout the world, and increasing the global demand for information and communications technology (ICT) skills. Innovations such as social networking, cloud computing, e-commerce, web conferencing, mobility and desktop virtualization are changing the way we live, work, play, and learn. These innovations are all powered by networks, and organizations around the world are experiencing a shortage of qualified ICT candidates to design, install, and manage these networks.

## Solution

The Cisco Networking Academy® IT Essentials curriculum provides an introduction to the computer hardware and software skills needed to help meet the growing demand for entry-level ICT professionals. The curriculum covers the fundamentals of computer technology, networking, mobility, and security, and also provides an introduction to advanced concepts.



IT Essentials is a hands-on, career-oriented course with an emphasis on practical experience to help students develop fundamental computer skills, along with essential career skills. The Cisco® IT Essentials curriculum helps students prepare for entry-level ICT career opportunities and the CompTIA A+ certification, which helps students differentiate themselves in the marketplace to advance their careers. In addition, the course provides a learning pathway to the Cisco CCNA® curricula.

## Features

IT Essentials 5.0 provides a comprehensive introduction to the ICT industry and interactive, hands-on exposure to personal computers, hardware, software, and operating systems. The curriculum offers the following features and benefits:

- Students develop working knowledge of how computers operate and how to assemble them.

Virtual learning tools supplement classroom instruction and provide opportunities for interactive “hands-on” learning in environments with limited networking equipment. The Virtual Desktop and Virtual Laptop tools enable students to virtually disassemble and reassemble desktops and laptops.

- Students gain confidence in working with the components of desktop and laptop computers by learning the proper procedures for hardware and software installations, upgrades, and troubleshooting
- Curriculum materials and labs are delivered through the Cisco NetSpace™ learning environment and include new topics such as mobile devices and client side virtualization, and expanded networking and troubleshooting topics.
- The NetSpace user interface provides improved functionality and flexibility for instructors.
- Hands-on labs and the Virtual Laptop and Virtual Desktop learning tools help students develop critical thinking and complex problem-solving skills.
- Cisco Packet Tracer simulation-based learning activities promote the exploration of networking and network security concepts, while allowing students to experiment with network behavior.
- Online assessments provide immediate feedback to support the evaluation of knowledge and acquired skills.

Who Should Enroll	Prerequisites
<ul style="list-style-type: none"> <li>▪ Students seeking career-oriented, entry-level computer hardware, software, and networking skills</li> <li>▪ Students who want to gain fundamental computer hardware, software, and troubleshooting skills</li> <li>▪ Students who want to prepare for the CompTIA A+ certification exams</li> </ul>	<p>There are no prerequisites for this course</p>

## 21st Century Skills

IT Essentials integrates practical skills training into the technical curriculum to help students succeed in future educational, entrepreneurial, and occupational endeavors.

In addition to learning the fundamentals of hardware, software, and operating systems, students develop problem solving, critical thinking, collaboration, communication, negotiation, and entrepreneurship skills, which can help them succeed in the 21st century global workplace.

## Assessments

Formative and summative assessments are integrated into the IT Essentials curriculum and supported by an advanced online delivery system. Immediate, rich feedback supports instructor and student evaluation of acquired knowledge and skills. Assessments can be as simple as a multiple choice question or as complex as troubleshooting a simulated network.

## Cisco Packet Tracer

Packet Tracer is a powerful network simulation program developed by Cisco Networking Academy that allows students to experiment with network behavior and ask “what if” questions. As an integral part of the IT Essentials curriculum, Packet Tracer provides simulation, visualization, authoring, assessment, and collaboration capabilities and facilitates the process of teaching and learning computer technology concepts.

Packet Tracer supplements physical equipment by allowing students to create networks with an almost unlimited number of devices; encouraging open learning, experimentation, and troubleshooting. The simulation-based learning environment helps students develop decision making, critical thinking, and problem solving skills.

IT Essentials encourages students to explore networking concepts using the Cisco Packet Tracer simulation and learning tool. Packet Tracer allows students to experiment with network behavior and develop critical thinking, collaboration, and problem solving skills, while gaining practical knowledge.

## Course Description

The IT Essentials course covers the fundamentals of computer hardware and software and advanced concepts such as security, networking, and the responsibilities of an IT professional. It is designed for students who want to pursue careers in ICT and students who want to gain practical knowledge of how a computer works.

Students who complete this course will be able to describe the internal components of a computer, assemble a computer system, install an operating system, and troubleshoot using system tools and diagnostic software. Students will also be able to connect to the Internet and share resources in a networked environment. New topics in this version include mobile devices such as tablets and smartphones and client side virtualization. Expanded topics include security, networking, and troubleshooting.

Hands-on lab activities are essential elements that are integrated into the curriculum. The Virtual Laptop and Virtual Desktop are standalone tools that enable students to virtually disassemble and reassemble desktop and laptop computers. Both tools are designed to supplement classroom learning and provide an interactive “hands-on” experience in environments with limited networking equipment.

Packet Tracer activities are designed for use with Packet Tracer 5.3.x. The inclusion of Packet Tracer supports alignment with the new CompTIA A+ certification objectives without requiring academies to purchase extra networking equipment.

### Module 8: Mobile Devices

- ▼ 8.0 Introduction
  - ▼ 8.0.1 Introduction
    - ▶ 8.0.1.1 Introduction
- ▶ 8.1 Mobile Device Hardware Overview
- ▶ 8.2 Mobile Operating Systems
- ▶ 8.3 Network Connectivity and Email
- ▶ 8.4 Methods for Securing Mobile Devices
- ▶ 8.5 Basic Troubleshooting for Mobile Devices
- ▶ 8.6 Summary

#### Introduction

#### Introduction

With the increase in demand for mobility, the popularity of mobile devices continues to grow. A mobile device is any device that is hand-held, light, and typically uses a touchscreen for input. Like a desktop or laptop computer, mobile devices use an operating system to run applications (apps), games, and play movies and music. Some examples of mobile devices include Android devices, such as the Samsung Galaxy Tab 2 tablet and Samsung Galaxy Nexus smartphone, and the Apple iPad and iPhone.

To facilitate mobility, mobile devices use many different wireless technologies. Many mobile device components, operating systems, and software are proprietary. It is important to become familiar with as many different mobile devices as possible.

You may be required to know how to configure, maintain, and repair various mobile devices. Some of the knowledge you acquire about desktop and laptop

Previous



Next

## Course Outline

Chapter	Goals
1. Introduction to the Personal Computer	Describe a personal computer system
2. Lab Procedures and Tool Use	Demonstrate safe lab procedures and proper tool use
3. Computer Assembly	Demonstrate safe lab procedures and proper tool use
4. Overview of Preventive Maintenance and Troubleshooting	Explain the purpose of and basic rules of preventive maintenance and the troubleshooting process
5. Operating Systems	Install, upgrade, navigate and troubleshoot various operating systems
6. Networks	Describe, create and maintain a network
7. Laptops	Describe how laptops are constructed, their basic configuration, maintenance, and troubleshooting
8. Mobile Devices	Describe operating systems, basic configuration, maintenance, security and repair for mobile devices
9. Printers	Demonstrate all procedures required for printers
10. Security	Explain importance of security, describe procedures, and perform security measures
11. The IT Professional	Describe the communication and related skills needed by an IT professional
12. Advanced Troubleshooting	Perform advanced troubleshooting procedures on computers, operating systems, laptops, printers, network and security

## Learning Outcomes

Upon completion of the IT Essentials course, students will be able to perform the following tasks:

- Define information technology (IT) and describe the components of a personal computer
- Describe how to protect people, equipment, and the environment from accidents, damage, and contamination
- Perform a step-by-step assembly of a desktop computer
- Explain the purpose of preventive maintenance and identify the elements of the troubleshooting process
- Install and navigate an operating system
- Configure computers to connect to a network
- Upgrade or replace components of a laptop based on customer needs
- Describe the features and characteristics of mobile devices
- Install and share a printer
- Implement basic hardware and software security principles



- Apply good communications skills and demonstrate professional behavior while working with customers
- Perform preventive maintenance and basic troubleshooting
- Assess customer needs, analyze possible configurations, and provide solutions or recommendations for hardware, operating systems, networking, and security

## Learning Environment

IT Essentials can be delivered as an independent curriculum or integrated into a broader course of study, such as technology or continuing education programs.

## Industry Recognized Certification

As a CompTIA Authorized Quality Curriculum, IT Essentials helps students prepare for the CompTIA A+ certification. The 801 exam covers PC hardware, networking, laptops, printers, and operational procedures. The 802 exam covers operating systems, security, mobile devices, and troubleshooting. Students must pass both exams to earn the CompTIA A+ certification.

## Careers

The IT Essentials curriculum supports students who want to prepare for entry-level positions in the ICT field within several different types of working environments:

- A corporate or mobile environment with a high level of face-to-face client interaction. Job titles include enterprise technician, IT administrator, field service technician, and PC technician.
- A remote work environment where client interaction, client training, operating systems, and connectivity issues are emphasized. Job titles include remote support technician, help desk technician, call center technician, IT specialist, and IT representative.
- Settings with limited customer interaction where hardware-related activities are emphasized. Job titles include depot technician and bench technician.

## Translated and Accessible

We are committed to making our courses and documentation accessible and usable by all students to help them achieve their goals. Our translation strategy for IT Essentials is focused on the following United Nations languages: Arabic, Simplified Chinese, French, Russian, and Spanish.

IT Essentials is also compatible with screen readers for students with accessibility needs—including those with visual and dexterity limitations. Media text descriptions are provided for course content and assessments.

## Cisco Networking Academy

In partnership with schools and organizations around the world, the Cisco Networking Academy program delivers a comprehensive learning experience to help students develop ICT skills for entry-level career opportunities, continuing education, and globally recognized career certifications. The courses also help students build 21st century skills such as collaboration and problem solving by encouraging practical application of knowledge through hands-on activities and network simulations.

Cisco Networking Academy teaches ICT skills to students from virtually every socioeconomic background and region of the world. Students gain the skills needed to pursue networking careers in a variety of industries such as technology, healthcare, financial services, fashion, and entertainment. Students also gain access to a global support group, career developments tools, and social networking resources.

## For More Information

To learn more about Cisco Networking Academy, visit [www.netacad.com](http://www.netacad.com).



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