

# Networking Essentials 2.0

## Product Overview

October 2020

[NetAcad.com](https://www.netacad.com)



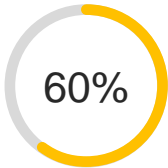


# Networking Essentials 2.0

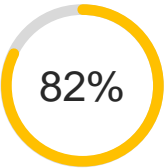
- Overview
- New Self-Paced Design
- Lab Equipment
- Logistics and Timing
- Instructor Training



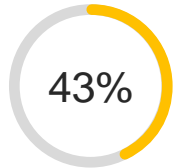
The network has become a core dependency for many functions today, including business-critical data & operations, cybersecurity, and more.



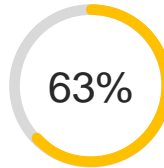
By 2023, over 60% of enterprises will deem networking as core to their digital strategy, up from 20% today. (1)



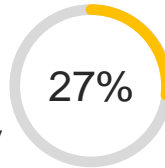
By 2022, internet video will represent 82% of all business internet traffic; VR/AR traffic will increase twelvefold.(2)



Globally, wireless devices will account for 43% of all networked devices by 2022. (3)



63% of IT leaders plan to put in place advanced networks that can dynamically meet business needs within three years. (4)



27% of IT leaders identified lack of necessary skills as a main obstacle to transitioning to an advanced network. (5)

Networking skills are valuable for many types of tech jobs.

# Networking Essentials 2.0

## Course



# Networking Essentials

## Course Overview

Networking Essentials teaches networking based on environments students may encounter in daily life, including small office and home office networking. This course provides an engaging, self-paced learning experience using Packet Tracer simulation, interactive activities, and learning with your own devices at home.

## Benefits

Develop a foundational understanding of the high-level network architecture and how a network operates.

## Prepare for Careers

- ✓ For developers, cybersecurity, business analysts, or other professionals: gain essential networking knowledge
- ✓ For students: a launching point for many career pathways, from cybersecurity to software to business and more

## Course Details

**Target Audience:** High school, secondary and 2-year college vocational students, college and university students studying IT and non-IT fields, career changers

**Estimated Time to Completion:** 70 hours

**Prerequisites:** None

**Course Delivery:** Self-Paced, Instructor-led

**Learning Component Highlights:**

- ✓ 20 modules and 19 practice labs
- ✓ 24 Cisco Packet Tracer activities
- ✓ 130+ interactive activities, videos, & quizzes
- ✓ 5 module exams
- ✓ 1 final exam and 1 skills assessment (Instructor-led only)

**Course Recognitions:** Certificate of Completion, Digital Badge (Instructor-led only)

**Recommended Next Course:**

CCNA: Introduction to Networks (ITN), Cybersecurity Essentials, or DevNet Associate



Networking



## Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No (uses Packet Tracer and devices you already have at home)
- **Discount Availability:** Not Applicable

Quick Links

[Course Page](#)

[Course Demos](#)

(Available for select courses)

[List of All Courses](#)

(Includes language availability)



Practice with  
Cisco Packet Tracer

# New Self-Paced Design!

Flexible, self-paced  
course design



Valuable for many types  
of tech jobs



Improved Outcomes





# Flexible, Self-Paced Course Design

## Available directly to students or instructor-led

### Direct to Students

- ✓ Students learn at their own pace
- ✓ Available anytime, anywhere
- ✓ Self-enroll through NetAcad.com or through an academy
- ✓ Certificate of Completion

### Instructor-Led

- ✓ Instructors provide mentorship & support
- ✓ Well-suited for flipped classroom
- ✓ Offered through an academy
- ✓ Certificate of Completion
- ✓ Digital Badge



**Highly interactive:** Labs, quizzes, interactive activities, videos, and more

**No equipment required:** Practice with Packet Tracer and devices already available at home



# Flexible, Self-Paced Course Design

## Significant enhancements to make this course highly interactive!

Engage students with videos, practice labs, quizzes, interactive activities, and more.

Available in both the Instructor-Led and Direct to Student offerings:

- ✓ **81 videos!**
- ✓ 51 Check Your Understanding
- ✓ 20 Modules Quizzes
- ✓ 19 Labs
- ✓ 24 Packet Tracer Activities
- ✓ 36 Animations
- ✓ 9 Interactive Activities



Take advantage of the new video content. Students can watch or re-watch at their own pace, and instructors can up-level your interactions with students.





# Flexible, Self-Paced Course Design

**Additional features for instructors to deliver a more customized and deeper experience.**

## Direct to Students

Features assessments launched by the student:

- ✓ 5 Self-Activated Module Pretests
- ✓ 5 Self-Activated Module Group Exams
- ✓ 1 Self-Activated, Final Exam
- ✓ 1 Self-Activated, Packet Tracer Skills Assessment (PTSA)

## Instructor-Led

Instructors have more control over exams, plus the ability to do a capstone activity:

- ✓ 5 Instructor-Activated Pretest
- ✓ 5 Instructor-Activated Module Group Exams
- ✓ 1 Instructor-Activated, **Secured, Dynamic Final Exam**
- ✓ 1 Instructor-Activated **Packet Tracer Skills Assessment**
- ✓ 2 **Skills Exams**
  - ✓ 1 using home equipment
  - ✓ 1 using Cisco router (optional)
- ✓ 1 **Capstone Activity**

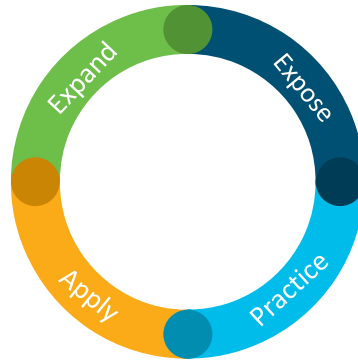


# Enhanced Course Design



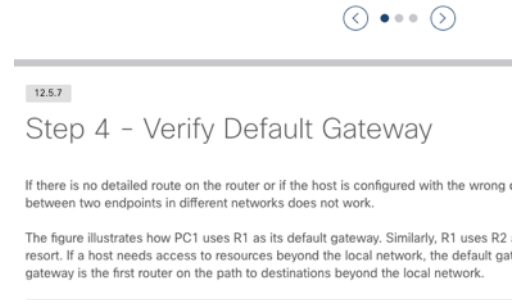
## Modular Design

- ✓ Self-contained units
- ✓ Targeted learning of skills



## Learning Effectiveness

- ✓ Better student engagement
- ✓ Designed for skills progression



## User Experience

- ✓ Improved student view and navigation
- ✓ Easier instructor content management



# Enhanced Course Design

## Introducing modules for better organization

- ✓ Topics are grouped together
- ✓ Find content more easily

A **module** is an integrated unit of learning that targets a common set of competencies or skills.

Module size depends on the competency and number of topics.



### Networking Academy

Today's organizations are challenged with rapidly detecting cybersecurity breaches and effectively responding to security incidents. Teams of people in Security Operations Centers (SOCs) keep a vigilant eye on security systems, protecting their organizations by detecting and responding to cybersecurity threats. CyberOps Associate v1.0 prepares learners to begin a career working as associate-level cybersecurity analysts within SOCs.

CyberOps Associate v1.0 (CA) contains 28 modules of content, labs, activities, videos and quizzes. Some of these labs use virtual machines to monitor and analyze cybersecurity threats.

When you have completed CA, you will have gained the practical experience you need to prepare for the certification exam. This course aligns with the Cisco Certified CyberOps Associate (CCROPS) certification. Candidates need to pass the 200-101 CCROPS exam to achieve the Cisco Certified CyberOps Associate certification. The CCROPS exam tests a candidate's knowledge and skills related to security concepts, security monitoring, host-based analysis, network intrusion analysis, and security policies and procedures.





# Enhanced Course Design

## Introducing an easier way to complete labs

- ✓ Lab questions are answered directly within the web browser
- ✓ No need to download files to read or complete the labs
- ✓ Answer button to help students if they get stuck
- ✓ Completed lab activities can be exported from the web browser and sent to instructor

### Step 2: The command ipconfig

The **ipconfig** command provides you with the IP address, subnet mask and default gateway.

- Open a **Command Prompt**. Click **Start**. Search for **Command Prompt**.
- At the prompt, enter **ipconfig** to determine the IP address assigned to each network adapter on your computer.

```
C:\Users\Student> ipconfig
```

```
Ethernet adapter Ethernet0:
```

```
Connection-specific DNS Suffix . . :  
Link-local IPv6 Address . . . . . : fe80::ac29:44a8:6409:c30e%6  
IPv4 Address. . . . . : 192.168.1.11  
Subnet Mask . . . . . : 255.255.255.0  
Default Gateway . . . . . : 192.168.1.1
```

What is the IPv4 address of the computer?

```
This is my answer to this question in the lab.  
192.168.1.1.
```

Hide Answer

Answers will vary. It is 192.168.1.11 in this example.

What is the subnet mask of the computer?

```
I think the subnet mask is 255.255.255.0.
```



# Enhanced Course Design

## Accessibility Enhancements



### Redesigned User Interface

- ✓ Developed for Web Content Accessibility Guidelines 2.1
- ✓ New sidebar navigation
- ✓ Mobile-friendly
- ✓ Performance enhancements
- ✓ Improved color contrast



### Enhancements for Screen Readers

- ✓ Media descriptions and transcripts throughout
- ✓ Descriptions & transcripts tied directly to user interface
- ✓ Conversion to HTML- screen reader can read tables, command windows, Syntax Checkers



### Better Keyboard Accessibility

- ✓ 'Skip to Content' sidebar navigation
- ✓ All activities are now keyboard accessible
- ✓ New, accessible header with all user functions



# Valuable for many types of tech jobs

## Gain a networking foundation



- With increasingly connected devices, as cybercrime skyrockets, and as industries struggle to keep pace, a wide span of career paths rely on the network.
- This low barrier survey course prepares learners with essential networking skills for many learning pathways.
- **For professionals:** Developers, data scientists, cybersecurity specialists, or others looking to gain essential knowledge of the networking domain.
- **For early in career:** An excellent launching point for students pursuing a wide range of career pathways – from cybersecurity to software development to business and more.



# Gain a networking foundation

Module		Module Group Assessments
Module 1	Communications in a Connected World	Modules 1 - 4: Internet Connection: Getting Online
Module 2	Online Connections	
Module 3	Explore Networks with Packet Tracer	
Module 4	Build a Simple Network	
Module 5	Communication Principles	Modules 5 - 8: Network Protocols and Architecture
Module 6	Network Design and the Access Layer	
Module 7	Routing Between Networks	
Module 8	The Internet Protocol	
Module 9	Dynamic Addressing with DHCP	Modules 9 - 12: Data Communications and Network Services
Module 10	IPv4 and IPv6 Address Management	
Module 11	Transport Layer Services	
Module 12	Application Layer Services	
Module 13	Build a Home Network	Modules 13 - 16: Home Network Basics
Module 14	Connect to the Internet	
Module 15	Security Considerations	
Module 16	Configure Network and Device Security	
Module 17	Cisco Switches and Routers	Modules 17 - 20: Introduction to Cisco Networking
Module 18	The Cisco IOS Command Line	
Module 19	Build a Small Cisco Network	
Module 20	Troubleshoot Common Network Problems	

NEW!



# Improved Outcomes

## Assessments to guide learning at strategic points



### Formative Assessments

- Check Your Understanding (multiple per module)
- Module Pretests and Quizzes
- Interactive Activities
- Syntax Checkers



### Summative Assessments

- Module Group Exams
- Practice Exam
- Packet Tracer Skills Assessment
- Secured, Dynamic Final Exam (Instructor-led only)
- Optional Physical Equipment Skills Assessment (Instructor-led only)
- Capstone Activity (Instructor-led only)





# Improved Outcomes

## Check Your Understanding

- Complete a topic with self-assessment
- Gives students the opportunity validate and retain critical knowledge
- Use feedback as review

The screenshot shows a quiz interface with the following elements:

- Header:** "Check Your Understanding - Ports and Addresses" with a close button (X) in the top right.
- Question 1:** "What is the structure of an IPv4 address called?"
  - Dotted-binary format
  - Dotted-decimal format
  - Dotted-hexadecimal format
- Question 2:** "How is an IPv4 address represented?" (marked with a red triangle warning icon)
  - Four binary numbers between 0 and 1 separated by colons.
  - Four decimal numbers between 0 and 255 separated by periods.
  - Thirty-two hexadecimal numbers separated by colons.
  - Thirty-two hexadecimal numbers separated by periods.
- Question 3:** "What type of interface has no physical port associated with it?" (marked with a red triangle warning icon)
  - Console
  - Ethernet
  - Serial
  - Switch virtual interface (SVI)
- Buttons:** "Check", "Show me", and "Reset" buttons are located on the right side.
- Feedback Pop-up:** A "Correct" message box is overlaid on the bottom left, stating: "You have successfully identified the correct answers. 1. IPv4 addresses are written in dotted-decimal format. For example: 192.168.1.1. 2. IPv4 addresses are written as four groups of decimal numbers separated by periods. For example: 192.168.1.1. 3. Switch virtual interfaces (SVIs), are virtual and have no physical port. Layer 2 switches use SVIs for remote management."
- Navigation:** "Save Configuration" and "Configure IP Addressing" buttons are at the bottom.



# Improved Outcomes

## Dynamic Forms - Administer unique exams to each of your students

- Exams are dynamically generated from pool of questions, maintaining exam integrity and validity
- Form and Section Details indicate total items available and selected from the pool for students.
- Module Group exam items, delivered or not, are available for preview with the assessment viewer

### Introduction to Networks ( Version 7.00) - Ethernet Concepts Exam

The screenshot displays the assessment viewer interface for the 'English FormA Ethernet Concepts Exam'. On the left, a sidebar lists exam sections: 'Module 4 - Dynamic' (selected), 'Module 6 - Dynamic', 'Module 7 - Dynamic', 'Ethernet Concepts - Static', 'Module 4 - Template', 'Module 6 - Template', and 'Module 7 - Template'. The main area shows a question prompt: 'Match the situation with the appropriate use of network media.' Below the prompt are six options: 'backbone cabling in an enterprise', 'guest access in a coffee shop', 'horizontal cabling structure', 'celling rooms in a hospital', 'desktop PCs in an enterprise office', and 'long-haul networks'. On the right, two panels provide details: 'Form Details' and 'Section Details'. The 'Form Details' panel shows the exam title and a description of the exam's scoring and item selection. The 'Section Details' panel shows the specific details for the 'Module 4 - Dynamic' section.

**Form Details**

English FormA Ethernet Concepts Exam

This is the first release of this form for the CCNA1 - Introduction to Networks v7.0 (ITN) curriculum. This exam will be scored using the Weighted Model where each MCSA (Multiple-Choice Single-Answer) is worth two points and each MCMA (Multiple-Choice Multiple-Answer) is worth one point for each correct option. If more options are selected than required, the student will receive a score of zero.

75 items are available.

34 items are selected and delivered to the learner.

Sections are displayed in random sequence.

**Section Details**

Module 4 - Dynamic

9 items are available.

6 items are selected and delivered to the learner.

Selected items are grouped together.

Selected items are displayed in random sequence.



# Improved Outcomes

## Secured Activation increases final exam security

### New Assessment Launcher

- Final exams remain secure until administered by instructor
- Replaces the Assessment Viewer
- For security & integrity, questions are not visible

Secured Assessment Launcher

### Introduction to Networks v7.0 (Version 7.00) - ITN Final Exam

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<b>Create Secured Activation</b> Create secured activations for the assessment	<b>Bulk Deactivation</b> Disregard incomplete attempts and deactivate available activations for the assessment.
<b>Manage Activations</b> Manage the activations for the assessment	<b>View All Attempts</b> View all the attempts for the assessment
	<b>Class Performance Summary</b> View the overall class performance for this assessment
	<b>Email Final Exam Scores</b> Email the student grades for the assessment

Secured Assessment Launcher / Create Secured Activation

### Introduction to Networks v7.0 (Version 7.00) - ITN Final Exam

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Settings | Students

**Current Time:** 11/22/2019 01:40 PM EST

**Start Time:** 11/22/2019 01 : 40 PM

**End Time:** 11/22/2019 02 : 40 PM

**Maximum Activation Window:** 7 days  
Activations that exceed the maximum will be converted to the Maximum Activation Window.

**Instructor Must Re-enable Incomplete Assessments:**

Checking this option means that the instructor must re-enable any exams that students have started but not completed. Option is unchecked for default activation.

**Languages**

If an assessment has not been translated into the selected language, the English version of that form will be provided.

English

**Exam Duration**

Duration indicates the amount of time that students are given to take an assessment after the assessment is started. The default duration is listed, however, this may be edited using 15-minute increments within the minimum and maximum duration permitted. If the requested duration is less than the minimum permitted for the exam, it will default to the minimum value. If the requested duration is more than the maximum permitted, it will be set to the default value.

1:15

**Assessment Administration**

Please let us know how you plan to administer this assessment. This information will be used for reporting and assessment development only. Please select one of the following options:

This assessment will be administered in a secure, proctored environment with no teamwork or access to learning materials permitted.

This assessment will be administered in a less secure environment and teamwork or access to learning materials will be permitted.

Unsure at this time.

Create Secured Activation



# Improved Outcomes

## Secured Activation provides useful insights on class performance

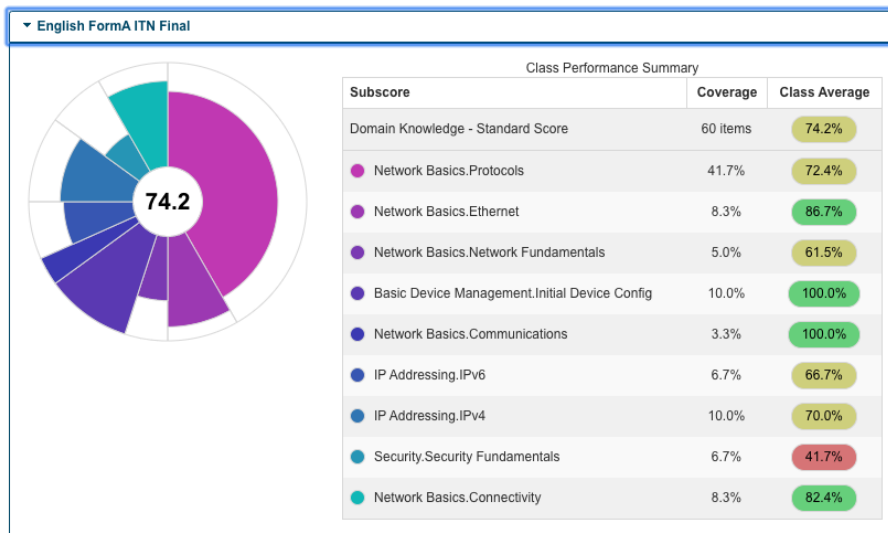
### Domain Level Reporting

- New Class Performance Summary report for instructors
- Replaces the Student Performance Summary
- See how your students are performing in each domain based on objectives of the modules and course

### ITNv7 Final Exam

[Secured Assessment Launcher](#) / [Class Performance Summary](#)

#### Introduction to Networks (Version 7.00) - ITNv7 Final Exam



Lab Equipment



# Networking Essentials 2.0 Lab - Designed for Self-Paced Learning

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- Students use their own home devices.
- No Cisco router or switch devices required. No cable making equipment is needed.



- ✓ Perfect for remote instruction
- ✓ Easy for students to get started right away
- ✓ Keep the educational value without the additional hardware costs

Each module contains some way to practice with home devices, Packet Tracer, or virtual machines

# Equipment Requirements



- ✓ Laptop or PC with minimum 4GB of RAM
- ✓ Internet Access
- ✓ 1 Wireless home router
- ✓ 1 Wireless NIC or USB dongle
- ✓ 1 Ethernet cable
- ✓ Latest version of Firefox or Google Chrome
- ✓ Cisco Packet Tracer 7.3.1 or later
- ✓ Latest version of Oracle Virtual Box

# Logistics & Timing







# Networking Essentials Course Resources

- Scope and Sequence
- FAQ
- Instructor Lab Source Files
- Instructor Packet Tracer Source Files
- Student /Instructor Packet Tracer Activity Source Files
- Student Lab Source File
- And more...

Networking  
Cisco Academy

Last Updated: 21 Oct 2020

## Networking Essentials 2.0 Frequently Asked Questions

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Access Course Resource Pages through NetAcad.com

<https://www.netacad.com/portal/resources/course-resources/networking-essentials>



# Networking Essentials End of Life

Course	Language	Last Class Start Date
	English	Oct 31, 2021
Networking Essentials Version 1.0	End-of-life dates for <u>translated languages</u> will be announced when each language is released. Dates will be a minimum of 1 year after respective language course resources are available.	

# Instructor Training



# Networking Essentials

## No Training Required

With the launch of version 2.0, all training requirements for Networking Essentials will be removed:

- Instructors no longer need to go to an in-person or remote instructor training class
- There is no need to complete any self-paced training.

The instructor training requirement is also being removed for Networking Essentials 1.0. As of the release of version 2.0, instructor training is no longer required for version 1.0.

This applies to all languages.

# Support for New Instructors

## **Are you new to teaching Networking Essentials?**

- New instructors can take advantage of the self-paced course as your means of preparation. This is not as a mandatory requirement, but as a resource for you.
- If necessary, new instructors will have the option to receive training through an ITC if available in your region.

