

Product Catalog

January 2021



Prepare the workforce of the future

Leading-edge curriculum
designed to educate students
for jobs of today and tomorrow



Networking

*Gain hands-on, relevant
networking skills*



Programmable Infrastructure

*Learn programming,
infrastructure automation,
and Internet of Things*



Cybersecurity

*Learn to secure and
defend networks*



OS & IT

*Essential skills for the
digital world*



Programming

*Learn to code in
languages like Python,
C, or C++*



Practice

*Interactive tools and
experiences build mastery,
not just knowledge*

Two Options for Course Modality

Instructor-Led



The majority of Networking Academy students take courses led by an instructor through an education institution in their local community.

Self-Paced



Online courses are self-paced and use the same curriculum taught in Networking Academy classrooms around the world.

Types of Course Offerings

Explore Courses

Easy starting points to explore opportunities in technology

- ✓ No prerequisites
- ✓ No cost
- ✓ Typically self-paced
- ✓ Between 8-30 hours

Career Courses

Equip students with real job skills for entry-level positions

- ✓ Aligned to industry-valued certifications
- ✓ Typically instructor-led and 70 hours of instruction time
- ✓ Integrated hands-on practice and interactive experiences

Complementary Offerings

Extend your teaching with courses from Networking Academy partners

- ✓ Aligned to industry-valued certifications
- ✓ Some self-paced courses
- ✓ Some instructor-led courses for 70 hours of instruction time

Practice

Learning tools, hands-on labs, and interactive experiences are integrated into courses to build skills, not just knowledge

In This Catalog

Easy navigation by course category.

CCNA: Introduction to Networking (ITN)

Course Overview
The first course in the CCNA curriculum introduces the architectures, models, protocols, and networking elements that connect users, devices, applications and data through the Internet and across modern computer networks – including IP addressing and Ethernet fundamentals.

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 17 modules and 24 practice labs
- ✓ 31 Cisco Packet Tracer activities
- ✓ 120+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course: CCNA: Switching, Routing, and Wireless Essentials (SRWE)

Benefits
Learn to build simple local area networks (LAN) that integrate IP addressing schemes, foundational network security, and perform basic configurations for routers and switches.

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Requirements & Resources

- ASC Alignment Required: Yes
- Instructor Training Required: Yes
- Physical Equipment Required: Yes
- Discount Availability: Not Applicable

Quick Links

- [Course Page](#)
- [Course Demos](#)
(Available for select courses)
- [List of All Courses](#)
(Includes language availability)

Certification Aligned
Cisco Certified Networking Associate

Find the course page on NetAcad.com.

Course Demos are available for select courses to preview the content.

Explore the full Networking Academy course list online and filter by language. There is also a language summary matrix at the end of this catalog.

Telegram Channel @nettrain

See which courses align with a certification, or get other tips about the course.

ASC Alignment Required: Due to the technical nature of some courses, Networking Academy may require that your institution receive support from an Academy Support Center (ASC).

Instructor Training Required: Some courses require accreditation or instructor training to ensure quality learning outcomes for your students.

Physical Equipment Required: Lab equipment may be required depending on the course.

Discount Availability: Discounts are available for select certification exams, for individuals meeting eligibility criteria.

Networking Academy Curriculum Portfolio

January 2021

Explore

Introduction to exciting opportunities in technology.

- ▲ Get Connected
- ▲ Introduction to Packet Tracer
- ▲ NDG Linux Unhatched
- ▲ Introduction to Cybersecurity
- ▲ Cybersecurity Essentials
- ▲ Introduction to IoT
- ▲ Entrepreneurship

Career

Preparation for entry level positions.



Digital Essentials

- ★ ● IT Essentials
- ▲ NDG Linux Essentials
- ▲ Networking Essentials

- ▲ PCAP: Programming Essentials in Python
- ▲ Hackathon Playbook (Design Thinking)



Networking

CCNA:

- ★ ● ■ Introduction to Networks (ITN)
- ★ ● ■ Switching, Routing, & Wireless Essentials (SRWE)
- ★ ● ■ Enterprise Networking, Security & Automation (ENSA)

CCNP Enterprise:

- ★ ● ■ Core Networking (ENCOR)
- ★ ● ■ Advanced Routing (ENARSI)



Programmable Infrastructure

Infrastructure Automation:

- ★ ● ■ DevNet Associate
- Workshop: Experimenting with REST APIs
- Workshop: Model-Driven Programmability

Internet of Things:

- ★ IoT Fundamentals: Connecting Things
- ★ IoT Fundamentals: Big Data & Analytics



Cybersecurity

- ★ ● ■ CyberOps Associate
- ★ ■ CCNA Security
- IoT Security

Practice

Increase mastery with hands-on tools & experiences

Packet Tracer

Gaming

Prototyping Lab

Virtual Labs

Assessments

Physical Equipment

Complementary Offerings

Additional offerings available from Partners.



- ▲ NDG Linux I
- ▲ NDG Linux II
- NDG NETLAB+
- NDG CyberOps Lab



- CLA: Programming Essentials in C
- CLP: Advanced Programming in C
- CPA: Programming Essentials in C++
- CPP: Advanced Programming in C++

○ Aligns to Certification

□ Instructor Training Required

▲ Self-paced

★ ASC Alignment Required

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Networking



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



Requirements & Resources

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

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Practice with
Cisco Packet Tracer

CCNA: Introduction to Networking (ITN)

Course Overview

The first course in the CCNA curriculum introduces the architectures, models, protocols, and networking elements that connect users, devices, applications and data through the Internet and across modern computer networks - including IP addressing and Ethernet fundamentals.

Benefits

Learn to build simple local area networks (LAN) that integrate IP addressing schemes, foundational network security, and perform basic configurations for routers and switches.

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 17 modules and 24 practice labs
- ✓ 31 Cisco Packet Tracer activities
- ✓ 120+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:

CCNA: Switching, Routing, and Wireless Essentials (SRWE)



Requirements & Resources

- ASC Alignment Required: Yes
- Instructor Training Required: Yes
- Physical Equipment Required: Yes*
- Discount Availability: Not Applicable

*Includes Distance Learning option with Packet Tracer if lab equipment is not available

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Telegram Channel: @nettrain



Certification Aligned
Cisco Certified Networking Associate

CCNA: Switching, Routing, and Wireless Essentials (SRWE)

Course Overview

The second course in the CCNA curriculum focuses on switching technologies and router operations that support small-to-medium business networks and includes wireless local area networks (WLAN) and security concepts.

Benefits

Students learn key switching and routing concepts. They can perform basic network configuration and troubleshooting, identify and mitigate local area network (LAN) security threats, and configure and secure a basic WLAN.

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 16 modules and 14 practice labs
- ✓ 31 Cisco Packet Tracer activities
- ✓ 70+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:

CCNA: Enterprise Networking, Security, and Automation (ENSA)



Requirements & Resources

- ASC Alignment Required: Yes
- Instructor Training Required: Yes
- Physical Equipment Required: Yes*
- Discount Availability: Not Applicable

*Includes Distance Learning option with Packet Tracer if lab equipment is not available

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Certification Aligned
[Cisco Certified Networking Associate](#)

CCNA: Enterprise Networking, Security, and Automation (ENSA)

Course Overview

The final course in the CCNA series covers the architecture, security, and operation of an enterprise network, along with introducing the new ways in which network engineers interact with programmable infrastructure.

Benefits

Gain skills to configure and troubleshoot enterprise networks, learn to identify and protect against cybersecurity threats, and discover key concepts of software-defined networking, including controller-based architectures and application programming interfaces (APIs).

Prepare for Careers

- ✓ Develop skills for entry-level networking jobs
- ✓ Prepare for CCNA certification exam
- ✓ Fulfill prerequisites to pursue more specialized networking skills

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 14 modules and 12 practice labs
- ✓ 29 Cisco Packet Tracer activities
- ✓ 100+ interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNP Enterprise: Core Networking (ENCOR)



Requirements & Resources

- ASC Alignment Required: Yes
- Instructor Training Required: Yes
- Physical Equipment Required: Yes*
- Discount Availability: Yes

*Includes Distance Learning option with Packet Tracer if lab equipment is not available

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Certification Aligned
[Cisco Certified Networking Associate](#)

CCNP Enterprise: Core Networking (ENCOR)

Course Overview

This first course in the 2-course CCNP Enterprise series covers switching, routing, wireless, and related security topics, along with the technologies that support software-defined, programmable networks.

Benefits

Gain practical, hands-on experience and skills needed to configure, operate and troubleshoot large scale enterprise networks.

Prepare for Careers

- ✓ Develop skills for professional-level networking roles
- ✓ Prepare for the Cisco Enterprise Network Core Technologies exam ([350-401 ENCOR](#)) to earn an Enterprise Core Specialist certification
- ✓ Completion of both CCNP Enterprise courses prepares for CCNP Enterprise certification

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Recommended Preparation: CCNA or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 29 chapters and 41 practice labs
- ✓ 24 Cisco Packet Tracer activities (optional)
- ✓ 35+ interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course: CCNP Enterprise: Advance Routing (ENARSI)



Networking



Requirements & Resources

- ASC Alignment Required: Yes
- Instructor Training Required: Yes
- Physical Equipment Required: Yes
- Discount Availability: Not Applicable

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Certification Aligned

[Cisco Certified Networking Professional](#)

CCNP Enterprise: Advanced Routing (ENARSI)

Course Overview

This second of the 2-course CCNP Enterprise series focuses on implementation and troubleshooting of advanced routing and redistribution for OSPF, EIGRP and BGP along with VPN technologies, infrastructure security and management tools used in Enterprise networks.

Benefits

Gain practical, hands-on experience and skills needed to configure, operate and troubleshoot large scale enterprise networks.

Prepare for Careers

- ✓ Develop skills for professional-level networking roles
- ✓ Prepare for Cisco Enterprise Advanced Routing & Services exam ([300-410 ENARSI](#)) to earn a CCNP Specialist certification
- ✓ Completion of both CCNP Enterprise courses prepares for CCNP Enterprise certification

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Recommended Preparation: ENCOR or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 23 chapters and 40 practice labs
- ✓ 20 Cisco Packet Tracer activities (optional)
- ✓ 25+ videos & quizzes, 2 Skills Assessments
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:

Broaden your skills with DevNet Associate, CyberOps Associate, Python, or Emerging Technologies Workshops



Networking



Requirements & Resources

- ASC Alignment Required: Yes
- Instructor Training Required: Yes
- Physical Equipment Required: Yes
- Discount Availability: Not Applicable

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Certification Aligned

[Cisco Certified Networking Professional](#)

Operating Systems & Information Technology



Get Connected

Course Overview

Get Connected students are introduced to the Internet and experiment with various social networking sites. Talking characters and devices make this course a user-friendly environment for an audience new to Information Technology (IT).

Benefits

The digital world is upon us both personally and professionally. Gain essential skills like basic computer skills, such as how to use a computer, connect devices, and access search, email, and social media.

Explore Opportunities in Technology

- ✓ Develop your digital basics
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and general audience new to IT

Estimated Time to Completion: 30 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:

- ✓ 5 chapters
- ✓ Illustrations and narrations guide students through topics
- ✓ Interactive activities, videos, & quizzes

Course Recognitions: Certificate of Completion

Recommended Next Course:
IT Essentials



Requirements & Resources

- ASC Alignment Required: No
- Instructor Training Required: No
- Physical Equipment Required: No
- Discount Availability: Not Applicable

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Career Advice

[Tips for getting started in your career](#)

IT Essentials

Course Overview

IT Essentials covers fundamental computer and career skills for entry-level IT jobs. Students apply skills and procedures to install, configure, and troubleshoot computers, mobile devices, and software.

Benefits

Learn the fundamentals of connecting computers to networks. Plus, you'll enjoy working with Cisco Networking Academy's advanced simulation tools with hands-on labs to hone your troubleshooting skills and immediately practice what you learn!

Prepare for Careers

- ✓ Develop skills for entry-level technical support roles
- ✓ Prepare for CompTIA A+ certification exam
- ✓ Build your foundation for CCNA-level courses

Course Details

Target Audience: Secondary and 2-year college vocational students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 14 chapters and 99 practice labs
- ✓ Cisco Packet Tracer, virtual laptop, and virtual desktop learning tools
- ✓ 29+ interactive activities
- ✓ 18+ assessments throughout the course
- ✓ 1 final and 2 practice certification exams

Course Recognitions: Certificate of Completion, Digital Badge, Letter of Merit

Recommended Next Course:
CCNA: Introduction to Networking (ITN)



OS & IT



Requirements & Resources

- ASC Alignment Required: Yes
- Instructor Training Required: Yes
- Physical Equipment Required: Yes
- Discount Availability: Not Applicable

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Certification Aligned
[CompTIA A+ Certification](#)

NDG Linux Unhatched

Course Overview

This course covers introductory back-end operating system knowledge by teaching basic installation and configuration of Linux and introducing the Linux command line.

Benefits

Learners ease into acquiring Linux knowledge without having to commit to more than 8 total hours of self-paced learning, guided step-by-step with a series of hands-on virtual machine activities.

Explore Opportunities in Technology

- ✓ Wade into the shallow end of Linux and see whether it's for you or not
- ✓ Develop your digital basics
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and general audience new to IT

Estimated Time to Completion: 6-8 hours

Prerequisites: None

Course Delivery: Self-paced

Learning Component Highlights:

- ✓ 1 module
- ✓ 20 pages
- ✓ Built-in Linux machine with activities
- ✓ 1 assessment

Course Recognitions: Letter of Completion

Recommended Next Course:
NDG Linux Essentials



OS & IT



Requirements & Resources

- ASC Alignment Required: No
- Instructor Training Required: No
- Physical Equipment Required: No
- Discount Availability: Not Applicable

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Career Advice

[Tips for getting started in your career](#)

NDG Linux Essentials

Course Overview

This course teaches fundamentals of the Linux operating system, command line, and open source programming concepts.

Benefits

Nearly every IT job requires some Linux knowledge. Gain hands-on practice with Linux commands through the Linux virtual machine embedded in the course.

Prepare for Careers

- ✓ Develop fundamental operating system skills for entry-level IT jobs
- ✓ Prepare for LPI certificate exam
- ✓ Fulfill prerequisites to pursue more specialized IT and networking skills

Course Details

Target Audience: Secondary and 2-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:

- ✓ 16 chapters and 13 practice labs
- ✓ Built-in virtual machine to experiment with Linux commands
- ✓ Learner-directed activities
- ✓ Chapter, midterm, and final exams

Course Recognitions: Letter of Completion

Recommended Next Course:
NDG Linux I

In partnership with



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OS & IT



Requirements & Resources

- ASC Alignment Required: No
- Instructor Training Required: No
- Physical Equipment Required: No
- Discount Availability: Yes



Certification Aligned

[Linux Professional Institute \(LPI\) Linux Essentials Professional Development Certificate](#)

NDG Linux I and II

Course Overview

A 2-course series for aspiring Linux system administrators. Covers performing maintenance tasks on the command line, installing and configuring a computer running Linux, and configuring basic networking, using virtual machines running Linux.

Benefits

More rigorous and comprehensive than NDG Linux Essentials, this course develops your Linux mastery. Gain hands-on practice with Linux commands through the Linux virtual machine embedded in the course.

Prepare for Careers

- ✓ Develop skills for careers in cloud computing, cybersecurity, information systems, networking, programming, software development, big data, and more
- ✓ Prepare for LPIC-1 certification exams

Course Details

Target Audience: 2-year and 4-year college students

Estimated Time to Completion: 140 hours

Recommended Preparation: NDG Linux Essentials or equivalent

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:

- ✓ Built-in virtual machine to experiment with Linux commands
- ✓ Practice labs and activities
- ✓ Chapter, midterm, and final exams

Course Recognitions: Letter of Completion

Recommended Next Course:
DevNet Associate

In partnership with



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Telegram Channel: @ndctrain



OS & IT

Requirements & Resources

- **ASC Alignment Required:** No
- **Instructor Training Required:** No
- **Physical Equipment Required:** No
- **Discount Availability:** Yes
- **Cost:** Fee for self-paced classes. Cost for instructor-led classes is determined by the institution.



Certification Aligned

[Linux Professional Institute LPIC-1](#)

Programming



PCAP: Programming Essentials in Python



Programming

Course Overview

Designed as easy to understand and beginner-friendly course focusing on various data collections, manipulation tools, logic and bit operations and creating basic REST APIs.

Benefits

Learn to design, write, debug, and run programs encoded in the Python language. No prior programming knowledge is required. The course begins with the very basics guiding you step by step until you become adept at solving more complex problems.

Prepare for Careers

- ✓ Develop fundamental programming skills
- ✓ Prepare for PCEP and PCAP certification exam
- ✓ Build your foundation to pursue more specialized networking and software development skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 60-70 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:

- ✓ 5 modules of interactive instructional content
- ✓ 30+ practice labs
- ✓ Built-in online tool for labs and practice
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
DevNet Associate

Requirements & Resources

- ASC Alignment Required: No
- Instructor Training Required: No
- Physical Equipment Required: No
- Discount Availability: Yes

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Telegram Channel: @nettrain



Certification Aligned

[PCEP: Certified Entry-Level Python Programmer](#)

[PCAP: Certified Associate in Python Programming](#)

CLA: Programming Essentials in C

Course Overview

This beginner course introduces the universal concepts of computer programming using the C language, and teaches the syntax, semantics, and data types of the C language.

Benefits

Build transferable skills. When you learn C, you develop overarching fundamentals for all programming languages. Practice your skills through hands-on labs and write your own programs!

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CLA certification exam
- ✓ Fulfill prerequisites to pursue more advanced programming skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 9 modules of interactive instructional content
- ✓ 80+ practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:

Internet of Things (IoT) Fundamentals, CCNA, NDG Linux Essentials

In partnership with



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Programming



Requirements & Resources

- ASC Alignment Required: No
- Instructor Training Required: No
- Physical Equipment Required: No
- Discount Availability: Yes



Certification Aligned

[CLA: C Programming Language Certified Associate](#)

CLP: Advanced Programming in C

Course Overview

This advanced course teaches intermediate to advanced coding such as C handling variable number of parameters (<stdarg.h>), low level IO (<unistd.h>), memory and strings (<string.h> et al.), processes and threads, floats and ints (<math.h>, <fenv.h>, <inttypes.h> et al), and network sockets.

Benefits

Extend your programming knowledge and proficiency. Learn to think harder and deeper about programming concepts.

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CLP certification exam
- ✓ Set yourself up to succeed in jobs related to software development, network engineering, and system administration

Course Details

Target Audience: 2-year and 4-year college and university students

Estimated Time to Completion: 70 hours

Prerequisites: CLA: Programming Essentials in C course, CLA certification, or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 8 modules of interactive instructional content
- ✓ 18 practice labs
- ✓ Quizzes, chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:

Internet of Things (IoT) Fundamentals,
NDG Linux I

In partnership with



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Programming



Requirements & Resources

- ASC Alignment Required: No
- Instructor Training Required: No
- Physical Equipment Required: No
- Discount Availability: Yes



Certification Aligned

[CLP: C Certified Professional Programmer](#)

CPA: Programming Essentials in C++

Course Overview

This beginner course introduces the basics of programming in the C++ language and the fundamental notions and techniques used in object-oriented programming.

Benefits

Build transferable skills. When you learn C, you develop overarching fundamentals for all programming languages. Practice your skills through hands-on labs and write your own programs!

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CPA certification exam
- ✓ Fulfill prerequisites to pursue more advanced programming skills

Course Details

Target Audience: Secondary, 2-year and 4-year college students

Estimated Time to Completion: 70 hours

Prerequisites: None

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 8 modules of interactive instructional content
- ✓ 100+ practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:

Internet of Things (IoT) Fundamentals,
NDG Linux Essentials, DevNet Associate



Programming



Requirements & Resources

- ASC Alignment Required: No
- Instructor Training Required: No
- Physical Equipment Required: No
- Discount Availability: Yes

In partnership with



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Telegram Channel: @ndgtrain



Certification Aligned

CPA: C++ Certified Associate
Programmer

CPP: Advanced Programming in C++

Course Overview

This advanced course teaches intermediate to advanced coding such as C++ template mechanism, understanding and using property template classes and methods, and the C++ STL library including solving common programming problems and the IO part.

Benefits

Extend your programming knowledge and proficiency. Learn to think harder and deeper about programming concepts.

Prepare for Careers

- ✓ Develop skills for entry-level programming roles
- ✓ Prepare for CPP certification exam
- ✓ Set yourself up to succeed in jobs related to software development, network engineering, and system administration

Course Details

Target Audience: 2-year and 4-year college and university students

Estimated Time to Completion: 70 hours

Prerequisites: CPA: Programming Essentials in C++ course, CPA certification, or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 9 modules of interactive instructional content
- ✓ 65 practice labs
- ✓ Chapter and final exams

Course Recognitions: Certificate of Completion

Recommended Next Course:
CCNP Enterprise, NDG Linux I

In partnership with



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Programming



Requirements & Resources

- ASC Alignment Required: No
- Instructor Training Required: No
- Physical Equipment Required: No
- Discount Availability: Not Applicable



Certification Aligned

CPP: C++ Certified Professional Programmer

Programmable Infrastructure

Internet of Things



Introduction to Internet of Things (IoT)

Course Overview

An introduction to the Internet of Things and how it enables Digital Transformation along with emerging technologies such as data analytics, artificial intelligence, and cybersecurity.

The course also highlights the importance of Intent-Based Networking using a software-driven approach and machine learning to be able to connect and secure tens of billions of new devices with ease.

Benefits

Gain a comprehensive view of how emerging technologies are shaping the digital business.

Explore Opportunities in Technology

- ✓ Develop your digital basics
- ✓ Explore the career opportunities in this new emerging technologies landscape

Course Details

Target Audience: Secondary, vocational, 2-year college, and general audience

Estimated Time to Completion: 20 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

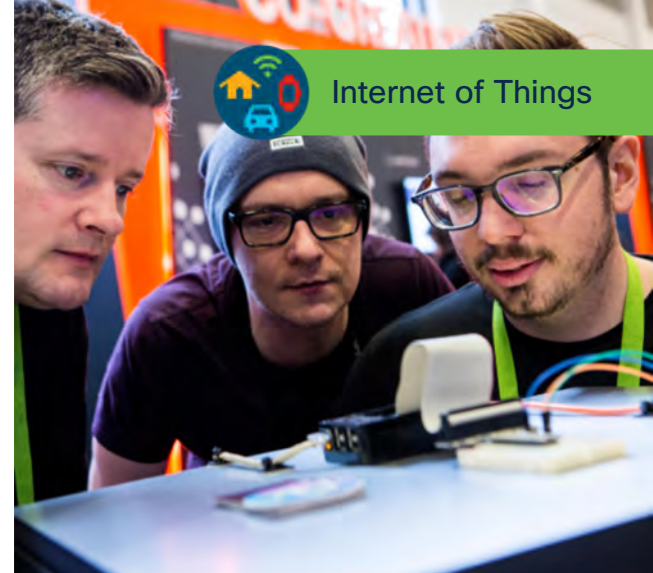
Learning Component Highlights:

- ✓ 6 chapters
- ✓ 17 practice labs (plus 4 optional labs)
- ✓ 7 Cisco Packet Tracer activities
- ✓ 40+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Insertion Points:

A great start for any learning path, and way to introduce the digital transformation before or during any Career course



Requirements & Resources

- ASC Alignment Required: No
- Instructor Training Required: No
- Physical Equipment Required: No (Optional labs require additional hardware)
- Discount Availability: Not Applicable

Quick Links

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[Course Demos](#)

(Available for select courses)

[List of All Courses](#)

(Includes language availability)

Telegram Channel: @nettrain



Hands-on practice with
Cisco Packet Tracer

IoT Fundamentals: Connecting Things

Course Overview

This highly hands-on course introduces how to securely interconnect sensors, actuators, microcontrollers, single-board computers, and cloud services over Internet Protocol (IP) networks to create an end-to-end IoT system.

Benefits

Develop the interdisciplinary skillset required to prototype an IoT solution for a specific business case with a strong focus on the security considerations for emerging technologies.

Prepare for Careers

- ✓ Develop an entrepreneurial and design-thinking foundation for IoT job families that exist today and in the future
- ✓ Practice integrating hardware, software, data analytics, and security concepts
- ✓ Build your foundation to pursue more specialized networking, software development, and IoT skills

Course Details

Target Audience: Secondary, vocational, 2-year and 4-year college, 4-year university students

Estimated Time to Completion: 40-50 hours

Prerequisites: Basic programming, networking, and electronics

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 6 chapters and 35 practice labs
- ✓ 9 Cisco Packet Tracer activities
- ✓ 32+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:

IoT Fundamentals: Big Data & Analytics or Hackathon Playbook (Design Thinking)



Internet of Things



Requirements & Resources

- ASC Alignment Required: Yes
- Instructor Training Required: Optional (Self-paced training option available)
- Physical Equipment Required: Yes
- Discount Availability: Not Applicable

Quick Links

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[Course Demos](#)

(Available for select courses)

[List of All Courses](#)

(Includes language availability)

Telegram Channel: @icttrain



Hands-on practice with
Prototyping Lab

IoT Fundamentals: Big Data & Analytics

Course Overview

This highly hands-on course introduces how to use Python data libraries to create a pipeline to acquire, transform and visualize data collected from IoT sensors and machines.

Benefits

The transformative element of any IoT system is the data that can be collected from it. The ability to extract data and using data analytics techniques to gain insights are skills highly-valued by employers.

Prepare for Careers

- ✓ Develop entrepreneurial and design-thinking skills for IoT job families that exist today and in the future
- ✓ Practice integrating hardware, software, data analytics, and security concepts
- ✓ Build your foundation to pursue more specialized networking, software development, and IoT skills

Course Details

Target Audience: 2-year and 4-year college, 4-year university students

Estimated Time to Completion: 40-50 hours

Prerequisites: IoT Fundamentals: Connecting Things

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 6 chapters and 11 practice labs
- ✓ 18 Jupyter Notebooks (with Python code)
- ✓ 35+ interactive activities, videos, & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:
IoT Fundamentals: Hackathon Playbook



Internet of Things



Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Optional (Self-paced training option available)
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

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(Includes language availability)

Telegram Channel: @netram



Hands-on practice with
Prototyping Lab

Hackathon Playbook (Design Thinking)

Course Overview

The Hackathon Playbook is a comprehensive framework of tools and templates to prepare and run a Hackathon as a result of best practices and lessons-learned collected from the global execution of IoT Hackathons within Networking Academy and by other organizers.

Benefits

Practice design thinking through a hands-on project. Deepen your multidisciplinary IoT and data skills by defining, designing, prototyping, and presenting an IoT solution to a panel of industry experts and peers.

Prepare for Careers

- ✓ Build a design thinking mindset
- ✓ Gain resume-worthy experience working on a real prototype
- ✓ Get feedback and mentorship from industry experts

Course Details

Target Audience: Secondary, vocational, 2-year and 4-year college, 4-Year university students

Estimated Time to Completion: 20-30 hours

Prerequisites: IoT Fundamentals: Connecting Things and/or Big Data and Analytics

Course Delivery: Instructor-led

Learning Component Highlights:
✓ Hands-on project

Course Recognitions: Certificate of Completion

Recommended Next Course:
Any Networking Academy Career course, or an industry IoT training program



Internet of Things



Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
(Self-paced training option available)
- **Physical Equipment Required:** Yes
- **Discount Availability:** Not Applicable

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(Includes language availability)

Telegram Channel: @netram



Hands-on practice with
Prototyping Lab

Programmable Infrastructure

Infrastructure
Automation



DevNet Associate

Course Overview

This course introduces the methodologies and tools of modern software development, applied to the IT and Network operations. It covers a 360 view of the domain including microservices, testing, containers and DevOps, as well as securely automating infrastructures with Application Programming Interfaces (APIs).

Benefits

Gain practical, relevant, hands-on lab experience, including programming in Python, using GIT and common data formats (JSON, XML and YAML), deploying applications as containers, using Continuous Integration/Continuous Deployment (CI/CD) pipelines, and automating infrastructure using code.

Prepare for Careers

- ✓ Develop skills for entry-level software development and infrastructure automation jobs
- ✓ Prepare for DevNet Associate certification exam

Course Details

Target Audience: Secondary vocational students, 2-year and 4-year college students and participants of coding bootcamps

Estimated Time to Completion: 70 hours

Recommended Preparation:

Object-oriented coding skills, equivalent to:
PCAP: Programming Essentials in Python
Fundamental skills of networking, equivalent to:
CCNA: Introduction to Networks

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 8 modules and 23 practice labs
- ✓ 5 Cisco Packet Tracer activities
- ✓ 6 videos, 8 quizzes, 8 module exams
- ✓ 1 final exam, 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course: CCNA, CCNP Enterprise, or CyberOps Associate



Infrastructure Automation

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** No (Uses Virtual Machines on the student's computer)
- **Discount Availability:** Yes

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(Includes language availability)

[Telegram Channel @nettrain](#)



Certification Aligned

[Cisco Certified DevNet Associate](#)

Workshop: Experimenting with REST APIs using Webex Teams

Course Overview

This workshop introduces the basic competencies needed to create applications and automate tasks using REST APIs, the most popular architecture for software integration in IT.

Benefits

Learn the value of the REST APIs architecture, practice Python programming skills, and perform basic software integration and automation using real-world APIs on an enterprise collaboration platform (Webex Teams).

Prepare for Careers

- ✓ Emerging Technologies Workshops are short, hands-on experiences to quickly develop new skills for today's job market
- ✓ Participate in relevant professional communities of practice (Cisco DevNet, GitHub, and Stack Overflow)

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-Year University students

Estimated Time to Completion: 8 hours

Prerequisites: Basic programming

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 2 chapters and 9 practice labs
- ✓ 13 interactive activities
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Insertion Points:

PCAP Programming Essentials in Python,
IoT Fundamentals: Connecting Things

Other Insertion Points:

IT Essentials, CCNA: Introduction to Networks



Infrastructure Automation

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** No (Self-paced training option available)
- **Physical Equipment Required:** Internet access to Cisco DevNet Labs and APIs (Free)
- **Discount Availability:** Not Applicable

Quick Links

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(Available for select courses)

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(Includes language availability)

[Telegram Channel @netram](#)



DevNet Sandbox

Practice running code on live network infrastructure

Workshop: Model-Driven Programmability

Course Overview

This workshop introduces students to device level programmability. By defining standardized device models and APIs, network device configuration and management tasks can be automated, making it easier to manage network devices at scale.

Benefits

Learn key model-driven programmability concepts: YANG to model networking devices, RESTCONF and NETCONF for device-level APIs, and Python scripting to programmatically retrieve and update device configurations.

Prepare for Careers

- ✓ Emerging Technologies Workshops are short, hands-on experiences to quickly develop new skills for today's job market
- ✓ Participate in relevant professional communities of practice (Cisco DevNet, GitHub, and Stack Overflow)

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-year university students

Estimated Time to Completion: 8 hours

Prerequisites: Basic programming, CCNA: Switching, Routing, and Wireless Essentials (SRWE) or equivalent

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 2 chapters and 10 practice labs
- ✓ 10 interactive activities
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Insertion Points:

- After CCNA: SRWE
- With CCNA Security or CCNP Enterprise: Core Networking (ENCOR)



Infrastructure Automation

Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** No (Self-paced training option available)
- **Physical Equipment Required:** Internet access to Cisco DevNet Labs and APIs (Free)
- **Discount Availability:** Not Applicable

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[Telegram Channel @netman](#)



DevNet Sandbox

Practice running code on live network infrastructure

Cybersecurity



Introduction to Cybersecurity

Course Overview

This course explores cyber trends, threats, and staying safe in cyberspace, and protecting personal and company data.

Benefits

Today's interconnected world makes everyone more susceptible to cyber-attacks. Learn how to protect your personal data and privacy online and in social media, and why more and more IT jobs require cybersecurity awareness and understanding.

Explore Opportunities in Technology

- ✓ Explore the world of cybersecurity and how it relates to YOU
- ✓ Develop your cybersecurity basics for a secure and safe digital life
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: Secondary and 2-Year college students, general audience

Estimated Time to Completion: 15 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:

- ✓ 5 modules and 7 practice labs
- ✓ Interactive activities & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: Cybersecurity Essentials



Cybersecurity



Requirements & Resources

- ASC Alignment Required: No
- Instructor Training Required: No
- Physical Equipment Required: No
- Discount Availability: Not Applicable

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Telegram Channel: @icttrain

Career Advice

[Tips for getting started in your career](#)

Cybersecurity Essentials

Course Overview

This course covers essential knowledge for all cybersecurity domains including information security, systems security, network security, ethics and laws, and defense and mitigation techniques used in protecting businesses

Benefits

The demand for security professionals continues to grow. Develop a foundational understanding of cybercrime, security principles, technologies, and procedures used to defend networks.

Explore Opportunities in Technology

- ✓ Build your cybersecurity foundation
- ✓ Take the next step in exploring the many career possibilities in cybersecurity
- ✓ See if you want to pursue job roles in networking or cybersecurity

Course Details

Target Audience: Secondary and 2-year college vocational students

Estimated Time to Completion: 30 hours

Prerequisites: Introduction to Cybersecurity

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:

- ✓ 8 chapters and 12 practice labs
- ✓ 10 Cisco Packet Tracer activities
- ✓ 40+ interactive activities & quizzes
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: CyberOps Associate



Cybersecurity



Requirements & Resources

- ASC Alignment Required: No
- Instructor Training Required: No
- Physical Equipment Required: No
- Discount Availability: Not Applicable

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Telegram Channel: @nettrain

Career Advice

[Tips for getting started in your career](#)

CyberOps Associate

Course Overview

This course introduces the core security concepts and skills needed to monitor, detect, analyze, and respond to cybercrime, cyberespionage, insider threats, advanced persistent threats, regulatory requirements, and other cybersecurity issues facing organizations.

Benefits

Gain practical, hands-on skills needed to maintain and ensure security operational readiness of secure networked systems.

Prepare for Careers

- ✓ Develop skills for entry-level security operations center (SOC) jobs
- ✓ Prepare for CyberOps Associate certification
- ✓ Pursue a career in cybersecurity operations, a rapidly-growing, exciting new area that spans all industries

Course Details

Target Audience: Students enrolled in technology degree programs at higher education institutions; IT professionals who wants to pursue a career in Security Operations

Estimated Time to Completion: 70 hours

Recommended Preparation: Introduction to Cybersecurity, Cybersecurity Essentials

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 28 chapters and 46+ practice labs
- ✓ 6 Cisco Packet Tracer activities
- ✓ 113 interactive activities, videos, & quizzes
- ✓ 1 practice certification exam

Course Recognitions: Certificate of Completion, Letter of Merit, Digital Badge

Recommended Next Course:
CCNA Security, IoT Security



Cybersecurity



Requirements & Resources

- **ASC Alignment Required:** Yes
- **Instructor Training Required:** Yes
- **Physical Equipment Required:** No (Uses Virtual Machines on the student's computer)
- **Discount Availability:** Yes

Quick Links

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(Available for select courses)

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(Includes language availability)

Telegram Channel: @nettrani



Certification Aligned

[Cisco Certified CyberOps Associate](#)

CCNA Security

Course Overview

This course introduces the core security concepts and skills needed to troubleshoot and monitor computer networks and help ensure the integrity of devices and data.

Benefits

Gain practical, hands-on skills to design, implement, and manage network security systems and ensure their integrity.

Prepare for Careers

- ✓ Build expertise in network security and data protection
- ✓ Develop skills for entry-level network security specialist roles
- ✓ Gain industry in-demand skills aligned with the National Institute for Standards and Technology (NIST) Cybersecurity Framework

Course Details

Target Audience: 2-year and 4-year college students in Networking or Engineering programs

Estimated Time to Completion: 70 hours

Prerequisites: CCNA: Switching, Routing, and Wireless Essentials (or equivalent)

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 11 chapters and 16 practice labs
- ✓ 13 Cisco Packet Tracer activities
- ✓ 65+ interactive activities, quizzes, chapter exams, and skills assessments
- ✓ 1 final exam

Course Recognitions: Certificate of Completion, Letter of Merit

Recommended Next Course:
CyberOps Associate, IoT Security



Cybersecurity

Requirements & Resources

- ASC Alignment Required: Yes
- Instructor Training Required: Yes
- Physical Equipment Required: Yes
- Discount Availability: Not Applicable

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Hands-on practice with
Cisco Packet Tracer

IoT Security

Course Overview

The explosive growth of connected IoT devices also increases the exposure to security threats. Learn to perform vulnerability and risk assessments, and research and recommend risk mitigation strategies for common security threats in IoT systems.

Benefits

Learn practical tools for evaluating security vulnerabilities, perform threat modeling, and recommend threat mitigation measures. Gain hands-on, transferable skills relevant across IoT and other network architectures.

Prepare for Careers

- ✓ Develop skills for entry-level roles in the rapidly growing IoT and security domains
- ✓ Increase awareness of emerging technologies in the IoT Security space, such as Blockchain

Course Details

Target Audience: Vocational, 2-year and 4-year College, 4-Year University students

Estimated Time to Completion: 50 hours

Prerequisites:

- IoT Fundamentals: Connecting Things
- Networking Essentials and Cybersecurity Essentials (or equivalent)

Course Delivery: Instructor-led

Learning Component Highlights:

- ✓ 6 chapters and 24 practice labs
- ✓ 5 Cisco Packet Tracer activities
- ✓ 50+ interactive activities, videos, & quizzes
- ✓ 1 hands-on capstone activity
- ✓ 1 IoT Security game with 10 missions
- ✓ 1 final exam

Course Recognitions: Certificate of Completion

Recommended Next Course:
CCNA Security or CyberOps Associate



Cybersecurity



Requirements & Resources

- ASC Alignment Required: Yes
- Instructor Training Required: Optional
- Physical Equipment Required: Yes
- Discount Availability: Yes

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Features the IoT Security Game!

Additional Courses



Entrepreneurship

Course Overview

This course teaches business and financial skills, behaviors, and attitudes, to help students develop an entrepreneurial mindset. Students learn by completing a series of interactive case studies that present realistic scenarios.

Benefits

Supplement your technical expertise with with entrepreneurial thinking, business development, and financial management skills.

Explore Opportunities in Technology

- ✓ Explore how to think like an entrepreneur
- ✓ Expand your mindset and employability with skills complementary to IT expertise
- ✓ Start exploring the many career possibilities these skills can open up for you

Course Details

Target Audience: General audience

Estimated Time to Completion: 15 hours

Recommended Preparation:
CCNA: Introduction to Networks

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:
✓ 7 modules with interactive, online case studies

Course Recognitions: Certificate of Completion

Recommended Next Course:
Hackathon Playbook (Design Thinking)



Business



Requirements & Resources

- ASC Alignment Required: No
- Instructor Training Required: No
- Physical Equipment Required: No
- Discount Availability: Not Applicable

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Telegram Channel: @Netram

Career Advice

[Tips for getting started in your career](#)

Practice

Hands-on tools & interactive experiences
to build skills, not just knowledge



Hands-On Practice

A key pillar of Networking Academy



Motivate your students with exciting experiences that make learning very real



Accelerate and optimize each student's path to career-ready skills



Build student confidence: "I can do this!"



Developed by learning scientists & subject-matter experts



A Suite of Lab Environments

Options ranging from simulation to physical hardware



Digital

- *Easy to scale*
- *Instant replay*
- *Less setup time & cost*



Real

- *Real-world devices*
- *Motivating for students*
- *Tactile learning*



**Simulation
with Packet
Tracer**



**Virtualized
Equipment**



**Virtual
Machines**



**Prototyping
Lab**



**Remote
Equipment**



**Physical
Hardware**

Packet Tracer

Overview

Cisco Packet Tracer is a powerful simulation and visualization learning environment. Practice building simple and complex networks across a variety of devices and extend beyond routers and switches.

Benefits

Teach complex concepts without complex hardware. Leverage the versatility of simulation for lectures, labs, games, homework, assessments, competitions, and distance learning.

Build Skills for Success

- ✓ Quickly try, experiment, learn, repeat
- ✓ Practice teamwork, critical thinking and creative problem solving skills
- ✓ Integration with online assessment engine prepares students for hands-on assessments

Details

Use it to:

- Create and configure your own networks
- Practice cabling your devices in the rack with Physical Mode
- See how packets travel through your network with Simulation Mode
- Program your own IoT smart solution
- And more!

How to Access:

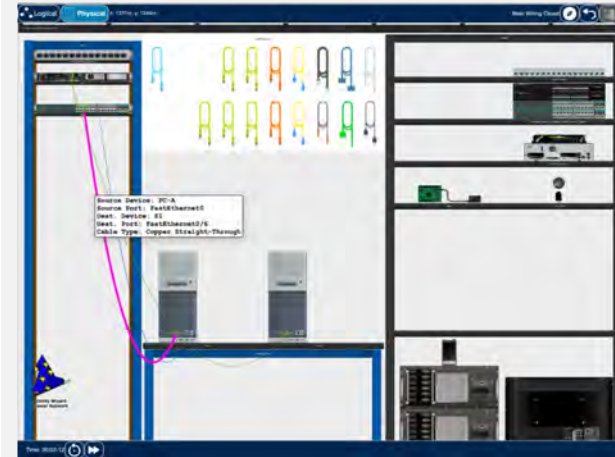
Enroll in Introduction to Packet Tracer course to download desktop version

Courses that use Packet Tracer include:

- Networking Essentials
- Cybersecurity Essentials
- IT Essentials
- CCNA
- CyberOps Associate
- DevNet Associate
- CCNP Enterprise
- Introduction to Internet of Things (IoT)
- IoT Fundamentals: Connecting Things
- IoT Security
- CCNA Security



Practice



Requirements & Resources

- Cost: Free

Quick Links

[Packet Tracer
Landing Page](#)

[Introduction to Packet Tracer
Course Page](#)

[Teaching with
Packet Tracer](#)

Telegram Channel: @hetram



Hands-on tools & interactive experiences to build skills, not just knowledge

Introduction to Packet Tracer

Course Overview

The Introduction to Packet Tracer series is designed for new users of Packet Tracer for self-study and familiarization with the tool used in many Networking Academy courses. Packet Tracer courses are available for the desktop and for mobile (Android and iOS).

Benefits

The Introduction to Packet Tracer series introduces tips and best practices to help instructors and students use Cisco Packet Tracer as an effective and engaging learning and assessment tool.

Explore Opportunities in Technology

- ✓ Learn the power of simulation tools to build and investigate networks in software
- ✓ Get familiar using Cisco Packet Tracer, a key learning tool you will use in NetAcad courses

Course Details

Target Audience: General audience

Estimated Time to Completion: 10 hours

Prerequisites: None

Course Delivery: Instructor-led or Self-paced

Learning Component Highlights:

- ✓ 8 chapters with instructional videos
- ✓ 13 Cisco Packet Tracer activities
- ✓ Sample files
- ✓ 2 quizzes

Course Recognitions: Certificate of Completion, Digital Badge

Recommended Next Course: Networking Essentials



Networking



Requirements & Resources

- ASC Alignment Required: No
- Instructor Training Required: No
- Physical Equipment Required: No
- Discount Availability: Not Applicable

Quick Links

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Telegram Channel: @netram



Hands-on practice with
Cisco Packet Tracer

Virtual Machines (VM)

Overview

Virtual machines are virtual environments that emulate a computer system. These self-contained virtual environments let students explore systems to the breaking point without causing actual damage.

Benefits

Experiment and explore in a low-risk environment. Deliberately test security threats and malware in a safe environment.

Build Skills for Success

- ✓ Hands-on cybersecurity practice
- ✓ Students become familiar with virtual machines to prepare for on-the-job skills

Details

Use it to:

- Teach virtual machine technology
- Simulate real-world cybersecurity threat scenarios
- Create opportunities for ethical hacking, security monitoring, analysis, and resolution

How to Access:

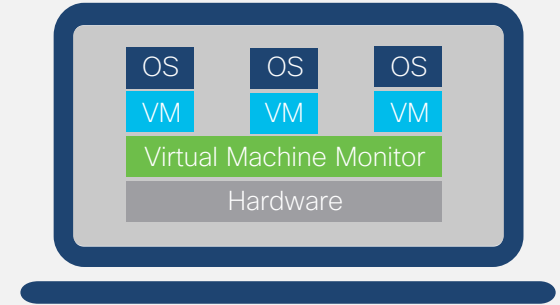
Free software download from Oracle VirtualBox
<https://www.oracle.com/virtualization/technologies/vm/downloads/virtualbox-downloads.html>

Courses that use Virtual Machines include:

- CCNA
- CyberOps Associate
- Emerging Technologies Workshop: Model-Driven Programmability
- DevNet Associate



Practice



Requirements & Resources

- Cost: Free



Hands-on tools & interactive experiences to build skills, not just knowledge

Prototyping Lab (PL App)

Overview

Dive into the world of sensors and connected things. The Prototyping Lab Kit uses a Raspberry Pi and Arduino setup to create an end-to-end IoT system on a lab table.

Benefits

Lab setup is easy with low-cost hardware and app download. Use real devices & code to collect, analyze, and present data from the physical world.

Build Skills for Success

- ✓ Spark entrepreneurial and systems thinking
- ✓ Students gain hands-on experience with an entire IoT system
- ✓ Build programming skills with Blockly visual programming or coding in Python

Details

Use it to:

- Acquire physical data with Arduino
- Collect and analyze data on Raspberry Pi
- Visualize data with Jupyter Notebook
- Connect to cloud applications with REST APIs

How to Access:

Prototyping Lab is comprised of the Prototyping Lab Kit (hardware) and Prototyping Lab App (software).

Find the hardware list and software download links on the Resources page:

<https://www.netacad.com/portal/resources/course-resources/cisco-prototyping-lab-resources>

Courses that use Prototyping Lab include:

- IoT Fundamentals: Connecting Things
- IoT Fundamentals: Big Data & Analytics
- Hackathon Playbook (Design Thinking)
- IoT Security

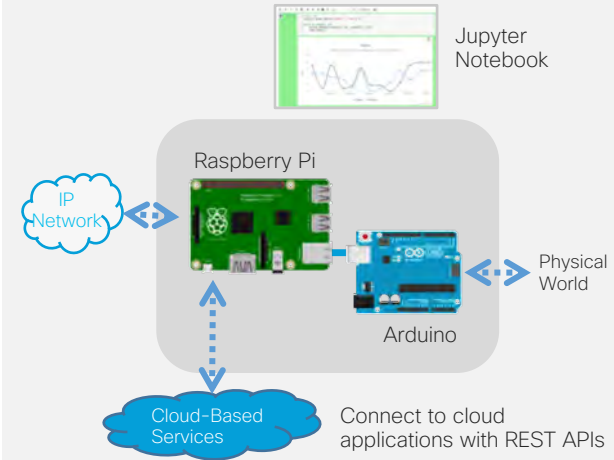
Prototyping Lab Kit includes:

- Raspberry Pi 3 CanaKit Ultimate Starter Kit (or equivalent)
- SparkFun Inventor's Kit for Arduino v3.2 (or equivalent)
- Cables, sensors, and actuators
- Prototyping Lab App

Telegram Channel @nettrain



Practice



Requirements & Resources

- **Cost:** Yes (for hardware); Free software download



Hands-on tools & interactive experiences to build skills, not just knowledge

Remote Equipment: NDG NETLAB+

Overview

Connect to real hardware through the web. Available through Networking Academy partnerships:

NDG NETLAB+ provides cloud-based, remote access to networking equipment and PCs.

Benefits

Reduce your setup time for complex labs with on-demand remote access to lab equipment when you need it.

Build Skills for Success

- ✓ Provide practice opportunities for students to complete labs from anywhere
- ✓ Supplement your lab offerings when physical hardware is not available at your institution

Details

Use it to:

- Access remote IT equipment through a web browser
- Reduce your lab setup time

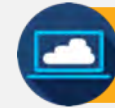
How to Access:

Learn more at the NDG NETLAB+ page for Networking Academy.

<https://www.netdevgroup.com/content/cnap/>

Courses that use Remote Equipment include:

- CCNA
- CCNP Enterprise
- IT Essentials
- CyberOps Associate
- CCNA Security



Practice

In partnership with



NETLAB+



Requirements & Resources

- Cost: Yes



Hands-on tools & interactive experiences to build skills, not just knowledge

Remote Equipment: DevNet Sandbox

Overview

Connect to real hardware through the web. Available through Networking Academy partnerships:

Cisco DevNet Sandbox offers packaged labs for software development, testing APIs, training, hackathons, and more.

Benefits

Reduce your setup time for complex labs with on-demand remote access to lab equipment when you need it.

Build Skills for Success

- ✓ Students get experience running their code against live network infrastructure
- ✓ Practice working in a sandbox environment just like on-the-job software developers

Details

Use it to:

- Interact with live network infrastructure and programmable devices using real-world Application Programming Interfaces (APIs)

How to Access:

Learn more at the Cisco DevNet Sandbox page <https://developer.cisco.com/site/sandbox/>

Courses that use Remote Equipment include:

- Workshop: Experimenting with REST APIs
- Workshop: Model-Driven Programmability
- DevNet Associate



Practice

DEVNET [DevNet Sandbox](#)



Requirements & Resources

- Cost: Free



Hands-on tools & interactive experiences to build skills, not just knowledge

Physical Hardware

Overview

Bring the real world inside the classroom so students can practice physical, sensory skills. Seeing and exploring with real equipment makes the abstract more tangible.

Benefits

Excite learners to consider career pathways in networking technology, and increase retention through tactile learning.

Build Skills for Success

- ✓ Provide hands-on practice with the same devices found in the work environment
- ✓ Students gain real experience even before on-the-job training
- ✓ Build transferable, career-ready skills

Details

How to Access:

1. Contact a local Cisco Reseller Partner for pricing and order fulfillment. Use [Partner Finder](#) to find one near you.
2. Consider working with an Academy Support Center (ASC) who can help you choose the best way to secure equipment needed for your location. They may offer loaner equipment or used equipment options

Courses that use Physical Hardware include:

- Networking Essentials
- IT Essentials
- CCNA
- CCNP Enterprise
- CCNA Security
- IoT Security



Requirements & Resources

- Cost: Yes

Discounts

Equipment discounts are available for Networking Academy institutions. Available for Cisco equipment needed for Networking Academy courses and labs when purchased through a Cisco Reseller Partner.



Hands-on tools & interactive experiences to build skills, not just knowledge

Language Availability



Explore Course Languages

Explore Courses	Arabic	Azerbaijani	Chinese - Simplified	Chinese - Traditional	Croatian	Dutch	English	French	Georgian	German	Greek	Hebrew	Hindi	Hungarian	Indonesian	Italian	Japanese	Kazakh	Korean	Polish	Portuguese - Brazil	Portuguese - Portugal	Romanian	Russian	Spanish	Turkish	Ukrainian
Cybersecurity Essentials			✓				✓	✓		✓							✓				✓			✓	✓		✓
Entrepreneurship	✓		✓	✓			✓	✓				✓				✓					✓				✓		
Get Connected			✓	✓			✓	✓		✓			✓			✓					✓	✓			✓		
Introduction to Cybersecurity	✓		✓			✓	✓	✓		✓	✓	✓			✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Introduction to IoT / Introduction to IoE	✓		✓	✓		✓	✓	✓		✓		✓				✓	✓	✓		✓	✓			✓	✓		✓
Introduction to Packet Tracer							✓																				✓
Networking Essentials 1.0	✓		✓				✓	✓		✓							✓				✓			✓	✓		
NDG Linux Unhatched							✓	✓		✓						✓					✓				✓		

Career Course Languages

Career Courses	Arabic	Azerbaijani	Chinese-Simplified	Chinese-Traditional	Croatian	Dutch	English	French	Georgian	German	Greek	Hebrew	Hindi	Hungarian	Indonesian	Italian	Japanese	Kazakh	Korean	Polish	Portuguese-Brazil	Portuguese-Portugal	Romanian	Russian	Spanish	Turkish	Ukrainian
CCNA: Introduction to Networks	✓		✓				✓	✓		✓						✓	✓			✓	✓			✓	✓	✓	✓
CCNA: Switching, Routing, and Wireless Essentials	✓		✓				✓	✓									✓			✓	✓			✓	✓		
CCNA: Enterprise Networking, Security, and Automation	✓		✓				✓	✓													✓			✓	✓		
CCNP Enterprise: Advanced Routing							✓																				
CCNP Enterprise: Core Networking							✓																				
DevNet Associate							✓	✓																			
CyberOps Associate							✓	✓													✓				✓		
CCNA Security			✓				✓																	✓			
CCNA R&S: Introduction to Networks*	✓		✓	✓	✓		✓		✓	✓		✓		✓		✓	✓			✓	✓		✓	✓	✓	✓	
CCNA R&S: Routing and Switching Essentials*	✓		✓	✓	✓		✓		✓	✓		✓		✓		✓	✓			✓	✓		✓	✓	✓	✓	
CCNA R&S: Scaling Networks*	✓		✓		✓		✓	✓						✓		✓	✓			✓	✓		✓	✓	✓		
CCNA R&S: Connecting Networks*	✓		✓		✓		✓	✓						✓		✓	✓			✓	✓		✓	✓	✓		
CCNA Cybersecurity Operations*			✓	✓			✓	✓								✓							✓	✓			

Career Course Languages

Career Courses	Arabic	Azerbaijani	Chinese-Simplified	Chinese-Traditional	Croatian	Dutch	English	French	Georgian	German	Greek	Hebrew	Hindi	Hungarian	Indonesian	Italian	Japanese	Kazakh	Korean	Polish	Portuguese-Brazil	Portuguese-Portugal	Romanian	Russian	Spanish	Turkish	Ukrainian
Emerging Technologies Workshop - Experimenting with REST APIs using Webex Teams							✓																				
Emerging Technologies Workshop - Model Driven Programmability							✓																				
IoT Fundamentals: Big Data & Analytics			✓				✓	✓																	✓		
IoT Fundamentals: Connecting Things			✓				✓	✓		✓															✓		✓
IoT Fundamentals: Hackathon Playbook							✓																		✓		✓
IoT Fundamentals: IoT Security			✓				✓																				
IT Essentials	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		✓		✓	✓	✓		✓	✓		✓	✓	✓	✓	✓
Networking Essentials 2.0							✓																				
NDG Linux Essentials							✓																		✓		
PCAP - Programming Essentials in Python							✓													✓					✓		

Complementary Offerings Languages

Complementary Courses	Arabic	Azerbaijani	Chinese-S	Chinese-T	Croatian	Dutch	English	French	Georgian	German	Greek	Hebrew	Hungarian	Italian	Japanese	Kazakh	Korean	Polish	Portuguese	Romanian	Russian	Spanish	Turkish	Ukrainian
NDG Linux I and II							✓																	
CLA: Programming Essentials in C							✓																	
CLP: Advanced Programming in C							✓																	
CPA: Programming Essentials in C++							✓																	
CPP: Advanced Programming in C++							✓																	

Quick Links

- Networking Academy Website - netacad.com
- [Networking Academy Program Overview](#)
- [Helpful Program Resources](#), including NetAcad Program FAQ
- [Course Demos](#) (available for select courses)
- [Cisco Interactive Course Pathways](#)
- [Employment Opportunities](#) (Talent Bridge)
- [Remote Teaching & Learning - Tools and Tips](#)



