Operating Systems & Information Technology

Why OS & IT?

A basic understanding of computer operating systems and information technologies provides the foundational knowledge needed for students to connect to the Internet and understand how systems and processes work together to power the Internet of Everything.

In partnership with NDG, we offer several courses on Linux, which is increasingly regarded as an essential platform for application development. These courses teach the skills needed to fill a growing number of jobs in the information and communication technology (ICT) field.

Career Prep

Courses range from Internet connectivity and social networking basics to teaching the skills needed to gain career certifications as a support technician, system administrator, network technician, or Linux professional.

- Get Connected
- IT Essentials (PT)
- NDG Linux Essentials
- NDG Introduction to Linux I
- NDG Introduction to Linux II

Get Connected

Course Overview

Get Connected teaches the basic information technology skills needed to compete in the global workforce, with a focus on basic communication and collaboration technologies.

Students are introduced to the Internet and experiment with various social networking sites.

Prerequisites: None

Languages: English, Spanish, Portuguese-BR

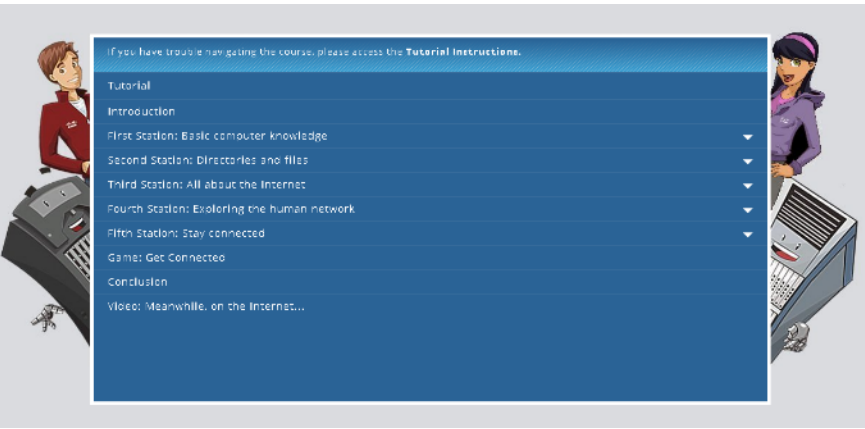
Course Delivery: Instructor led or self paced

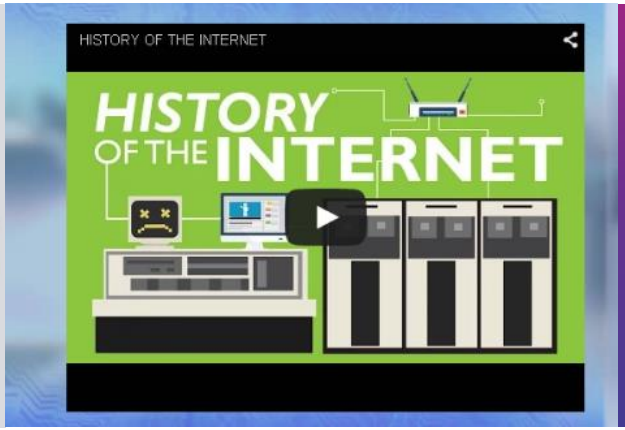
Estimated Time to Complete: 30 hours

Recommended Next Course: IT Essentials

Career Prep

Non-IT students specifically, and anyone seeking to develop basic ICT and social networking skills, which are essential for career advancement.





Learning Components

- 5 chapters
- Illustrations and narrations guide students through topics
- Videos and activities
- Quizzes

IT Essentials

Course Overview

IT Essentials covers the fundamentals of computer hardware and software and introduces advanced security and networking concepts.

Students learn how to assemble computers and troubleshoot hardware and software issues.

Prerequisites: None

Languages: Arabic, Chinese-S, Chinese-T, Croatian, English, French, German, Hebrew, Hungarian, Italian, Japanese, Portuguese-Brazilian, Romanian, Russian, Spanish, Turkish, Ukrainian

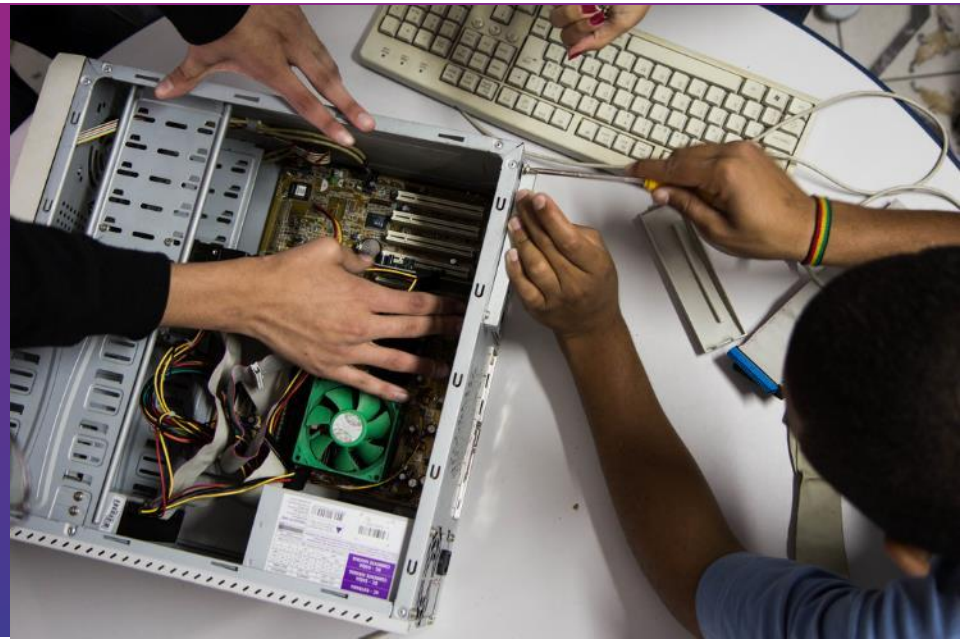
Course Delivery: Instructor led

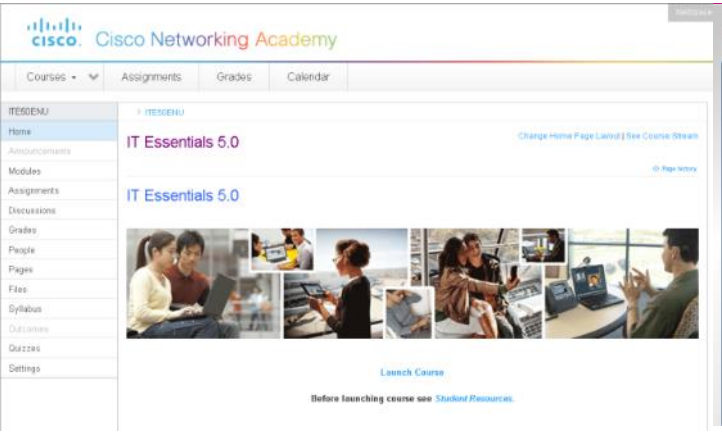
Estimated Time to Complete: 70 hours

Recommended Next Course: CCNA R&S Intro to Networks

Career Prep

Upper secondary and junior college students seeking career-oriented, entry-level hardware and software skills to prepare for technical support roles. Aligns with the CompTIA A+ certification for IT support technicians, administrators, and specialists.





Learning Components

- 12 chapters
- 180 hands-on labs and learning activities
- Cisco Packet Tracer, virtual laptop, and virtual desktop learning tools
- 12 chapter exams, 1 checkpoint exam, 1 skills review exam, 1 practice final exam, 1 final exam, 1 skills-based assessment, and 2 practice exams for CompTIA A+ certification

NDG Linux Essentials

Course Overview

The Linux Essentials course, developed by NetAcad partner NDG, teaches students the fundamentals of the Linux operating system and command line and open source concepts.

The Linux virtual machine is embedded in the course; allowing students to experiment with Linux commands.

Prerequisites: None

Language: English

Course Delivery: Instructor led and Self-paced*

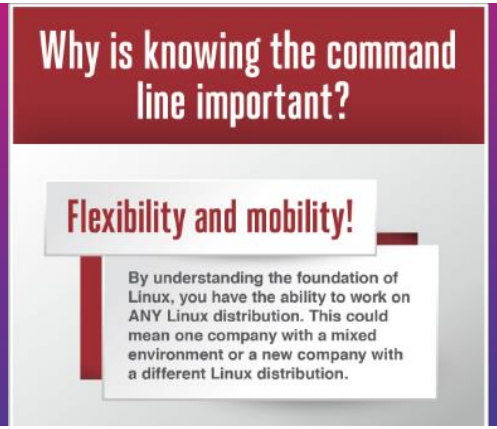
Estimated Time to Complete: 70 hours

***Fee**: $39.95 USD for Self-paced only

Recommended Next Course: CCNA R&S Introduction to Networks

Career Prep

Upper secondary school and junior college students interested in learning Linux OS, open source programming, and IoE skills to expand IT knowledge beyond networking. Aligns with the Linux Professional Institute (LPI) Linux Essentials Professional Development Certificate.



Learning Components

- 16 chapters
- Built-in virtual machine to experiment with Linux commands
- 13 lab exercises
- Learner-directed activities
- Chapter exams, mid-term, and final exam

NDG Introduction to Linux I

Course Overview

The NDG Introduction to Linux I course, developed by NetAcad partner NDG, teaches students the Linux skills required to prepare for the Linux Professional Institute LPIC-1 first certification exam or the CompTIA Linux+ powered by LPI first certification exam.

Prerequisites: None required, but NDG Linux Essentials or equiv. knowledge recommended

Language: English

Course Delivery: Instructor led* and Self-paced*

Estimated Time to Complete: 70 hours

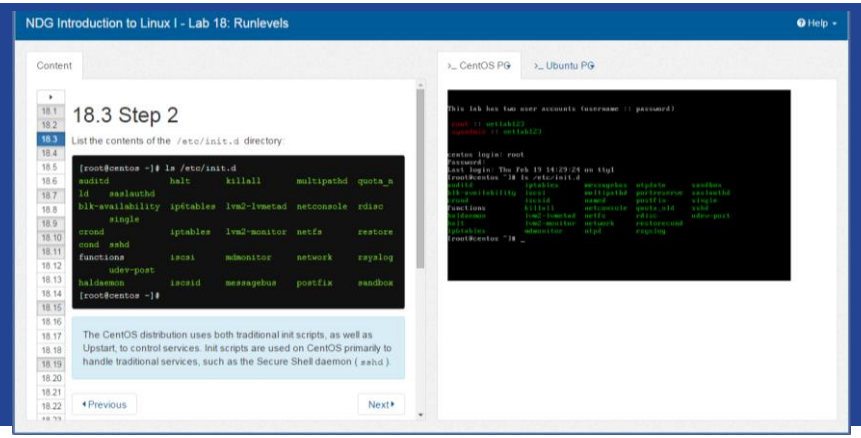
***Fee:** $39.95 USD per learner.

Recommended Next Course: NDG Intro to Linux II

Career Prep

Aligns with the Linux Professional Institute LPIC-1 and CompTIA Linux+ powered by LPI first exam.

NDG Introduction to Linux I



Learning Components

- 27 chapters
- Built-in virtual machine to experiment with Linux commands
- 24 lab exercises
- Learner-directed activities
- Chapter exams, mid-term, and final exam

NDG Introduction to Linux II

Course Overview

The NDG Introduction to Linux II course, developed by NetAcad partner NDG, teaches students the Linux skills required to prepare for the Linux Professional Institute LPIC-1 second certification exam or the CompTIA Linux+ powered by LPI second certification exam.

Prerequisites: None

Language: English

Course Delivery: Instructor led* and Self-paced*

Estimated Time to Complete: 70 hours

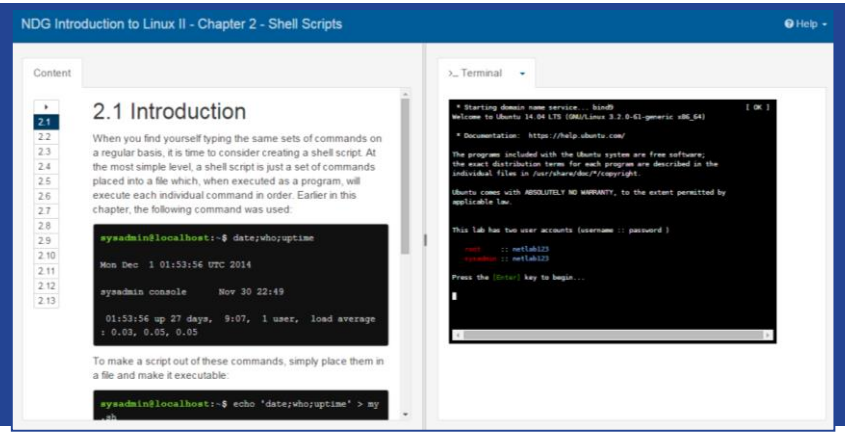
***Fee:** $39.95 USD per learner

Recommended Next Course: CCNA R&S Intro to Networks

Career Prep

Aligns with the Linux Professional Institute LPIC-1 and CompTIA Linux+ powered by LPI second exam.

NDG Introduction to Linux II



Learning Components

- 19 chapters
- Built-in virtual machine to experiment with Linux commands
- 19 lab exercises
- Learner-directed activities
- Chapter exams, mid-term, and final exam

Networking

Why Networking?

As our world becomes increasingly reliant on computer networks and networking technologies, there's a growing need for professionals who can design, build, manage, and secure networks.

Our networking courses introduce students to a range of topics, from routing protocols and network applications to network services and configurations. The courses emphasize hands-on learning and troubleshooting.

Career Prep

Our networking courses align with globally recognized career certifications including Cisco CCENT, CCNA R&S, and CCNP R&S.

Students learn how to become network administrators and network managers.

CCNA Routing & Switching (1-4) PT

CCNP Routing & Switching (1-3)

Networking Essentials PT

CCNA Routing and Switching Curriculum

Curriculum Overview

The 4 courses in the CCNA R&S curriculum help students develop a comprehensive understanding of how networks operate, from protocols and services to network management, with an emphasis on hands-on learning and essential career skills like problem solving and collaboration.

Prerequisites: IT Essentials or equivalent knowledge

Languages: Arabic, Chinese-Simplified, English, French, Japanese, Portuguese-Brazilian, Russian, Spanish (courses 1 and 2 also available in German, Hungarian, and Turkish; course 1 also available in Romanian)

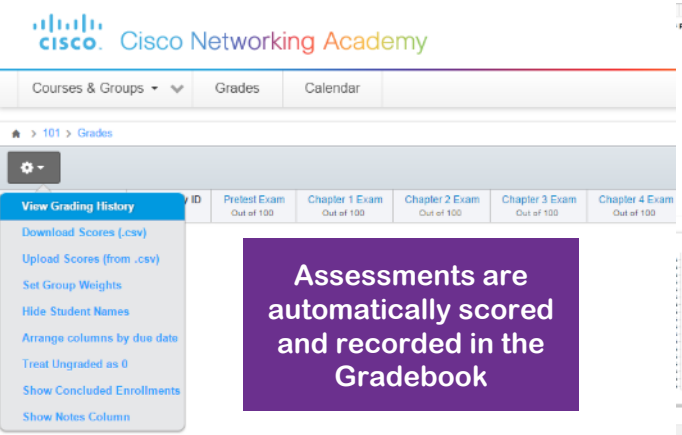
Course Delivery: Instructor led

Estimated Time to Complete: 280 hours

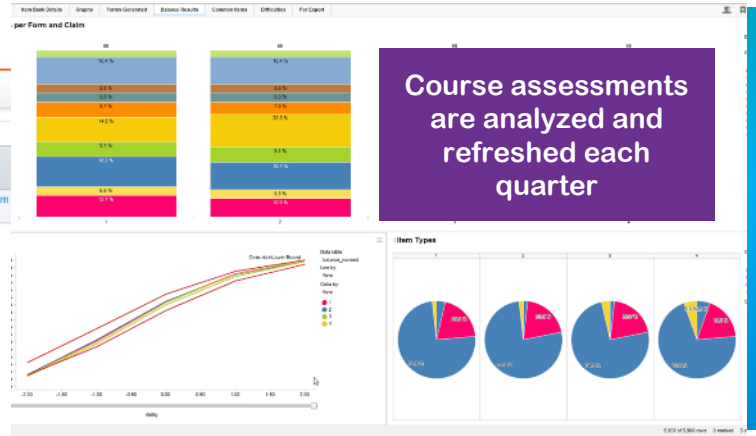
Recommended Next Course: CCNA Security or CCNP

Career Prep

Courses 1-2 align with the Cisco CCENT certification and courses 3-4 align with the Cisco CCNA R&S certification. Students gain the skills needed to become network administrators, technicians, or managers.



Assessments are automatically scored and recorded in the Gradebook



Course assessments are analyzed and refreshed each quarter

Learning Components

- 4 courses: Introduction to Networks, Routing and Switching Essentials, Scaling Networks, Connecting Network
- Hands-on labs and Cisco Packet Tracer network simulation activities
- Videos and activities to reinforce learning
- Quizzes and exams to measure learning outcomes

CCNA R&S: Introduction to Networks

Course Overview

The first course in the Cisco CCNA Routing and Switching curriculum teaches students about the architecture, structure, functions and components of the Internet and other computer networks.

Students gain an essential foundational understanding of how networks operate.

Prerequisites: IT Essentials or equivalent knowledge

Languages: Arabic, Chinese-Simplified, Croatian, English, French, German, Hungarian, Japanese, Portuguese-Brazilian, Polish, Romanian, Russian, Spanish, Turkish

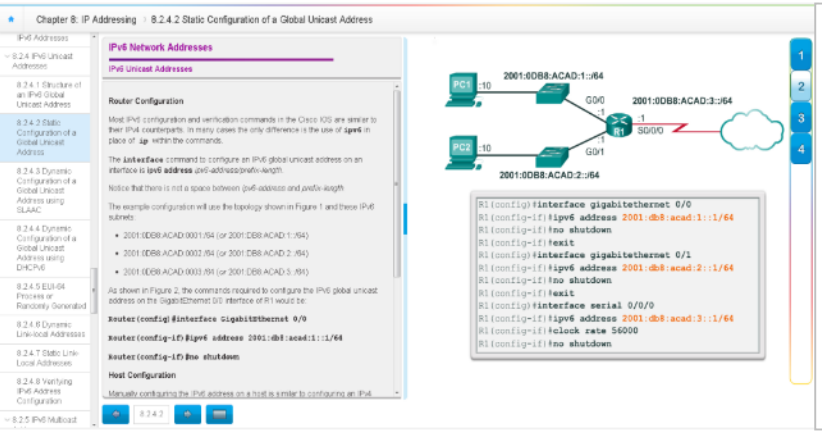
Course Delivery: Instructor led

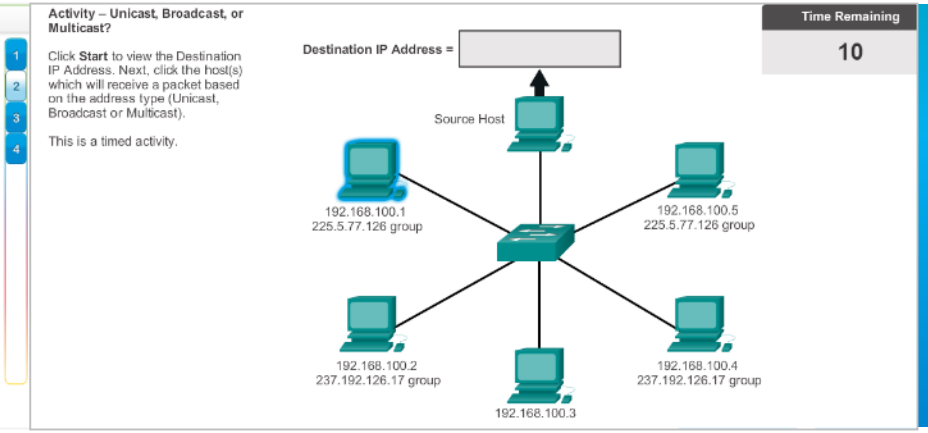
Estimated Time to Complete: 70 hours

Recommended Next Course: CCNA R&S Routing & Switching Essentials

Career Prep

Secondary school through university students seeking skills for entry-level networking jobs or more specialized ICT training.





Learning Components

- 11 chapters
- 33 hands-on labs and 1 hands-on skills assessment
- Pre-test, 11 chapter quizzes, 2 sectional quizzes, 11 chapter exams, and 1 final exam
- 2 Cisco Packet Tracer Skills Based Assessments

CCNA R&S: Routing and Switching Essentials

Course Overview

The second course in the CCNA Routing and Switching curriculum describes the architecture, components, and operations of routers and switches in a small network.

Students learn how to configure a router and a switch for basic functionality

Prerequisites: CCNA R&S: Introduction to Networks

Languages: Arabic, Chinese-Simplified, English, French, German, Hungarian, Japanese, Portuguese-Brazilian, Polish, Russian, Spanish, Turkish

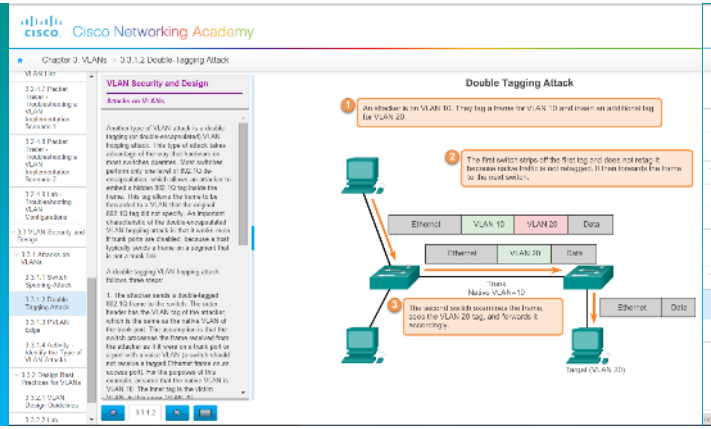
Course Delivery: Instructor led

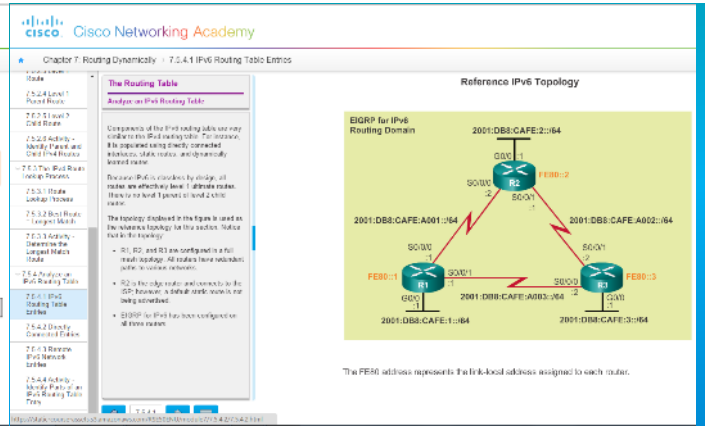
Estimated Time to Complete: 70 hours

Recommended Next Course: CCNA R&S Scaling Networks or CCNA Security

Career Prep

Secondary school through university students seeking Cisco CCENT certification and skills for entry-level network technician jobs.





Learning Components

- 11 chapters
- 33 hands-on labs and 1 hands-on skills assessment
- Pre-test, 11 chapter quizzes, 11 chapter exams, 2 sectional quizzes, and 1 final exam
- 3 Cisco Packet Tracer Skills Based Assessments

CCNA R&S: Scaling Networks

Course Overview

The third course in the CCNA Routing and Switching curriculum describes the architecture and operations of routers and switches in large, complex networks.

Students learn how to configure and troubleshoot routing and switching technologies and protocols.

Prerequisites: CCNA R&S: Routing & Switching Essentials

Languages: Arabic, Chinese-Simplified, English, French, Japanese, Portuguese-Brazilian, Russian, Spanish

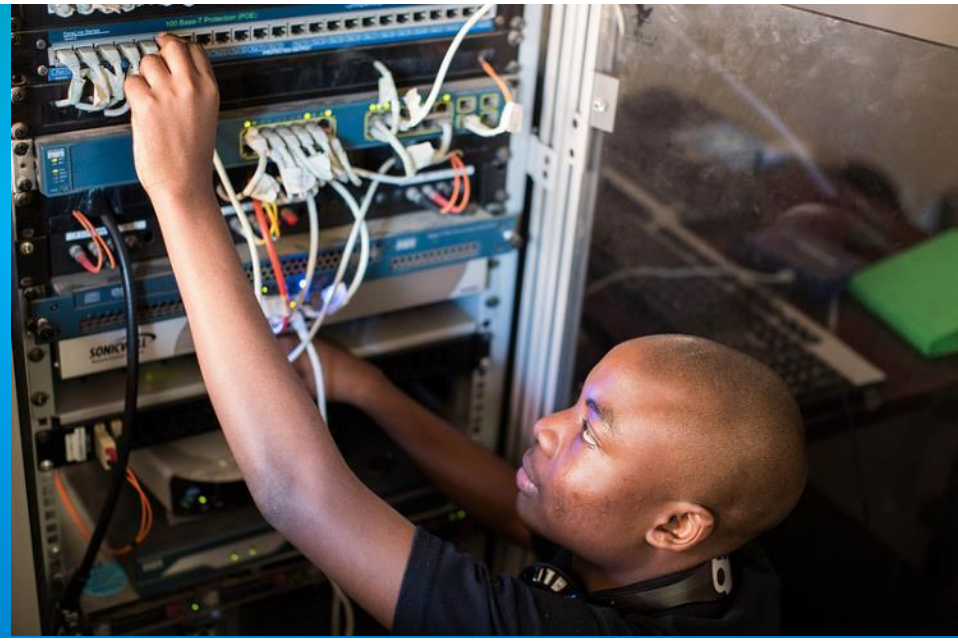
Course Delivery: Instructor led

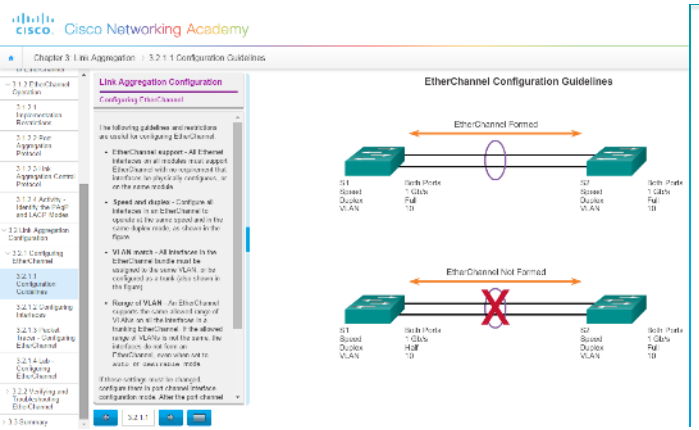
Estimated Time to Complete: 70 hours

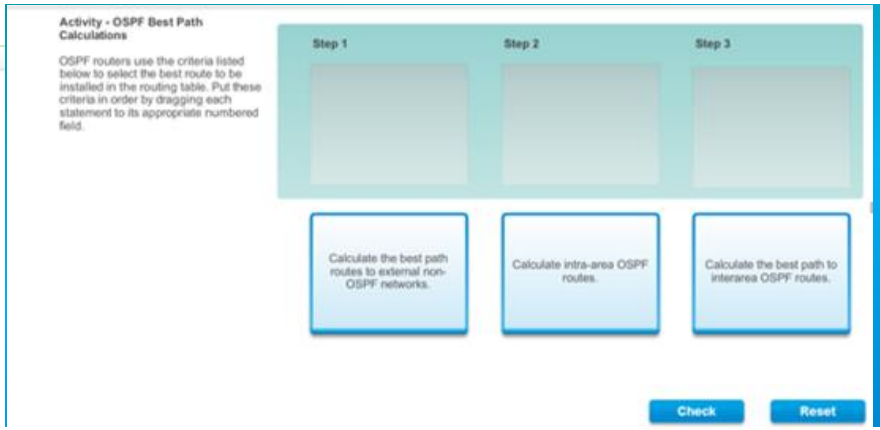
Recommended Next Course: CCNA R&S Connecting Networks

Career Prep

Junior college and university students seeking skills for entry-level network administration jobs or more specialized ICT training







Learning Components

- 9 chapters
- 19 hands-on labs and 2 hands-on skills assessments
- Pre-test, 9 chapter quizzes, 9 chapter exams, 2 sectional quizzes, and 1 final exam
- 2 Cisco Packet Tracer Skills Based Assessments

CCNA R&S: Connecting Networks

Course Overview

The fourth and final course in the CCNA Routing and Switching curriculum covers the WAN technologies and network services employed by converged applications in a complex network.

Students learn how to configure and troubleshoot network devices and implement virtual private networks.

Prerequisites: CCNA R&S: Scaling Networks

Languages: Arabic, Chinese-Simplified, English, French, Japanese, Portuguese-Brazilian, Russian, Spanish

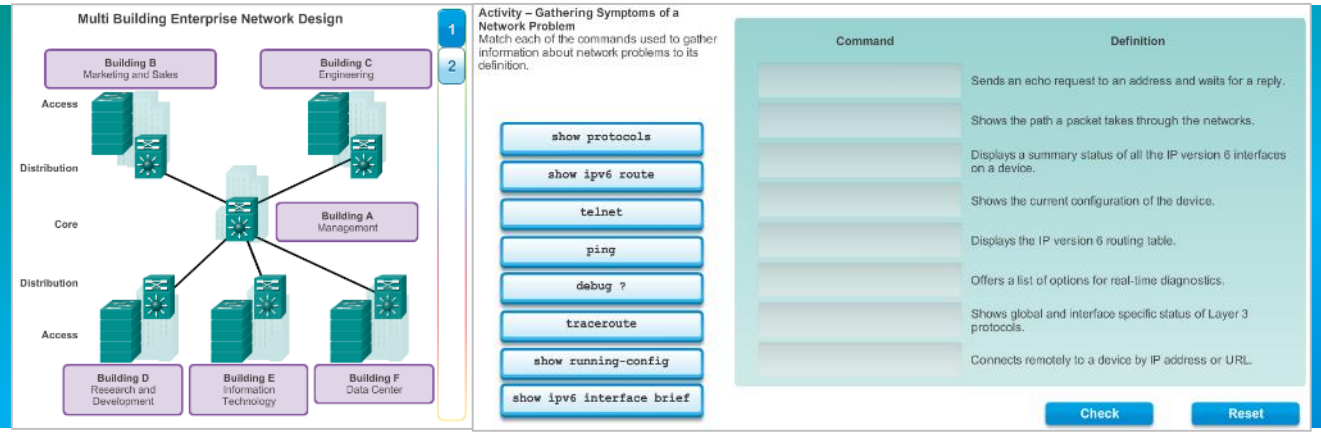
Course Delivery: Instructor led

Estimated Time to Complete: 70 hours

Recommended Next Course: CCNA Security or CCNP R&S ROUTE

Career Prep

Junior college and university students seeking Cisco CCNA R&S certification and skills for entry-level network administration jobs



Learning Components

- 9 chapters
- 12 hands-on labs and 1 hands-on skills assessment
- Pre-test, 9 chapter quizzes, 9 chapter exams, 2 sectional quizzes, and 1 final exam
- 2 Cisco Packet Tracer Skills Based Assessments

CCNP Routing & Switching

Course Overview

The three CCNP Routing & Switching courses provide a comprehensive overview of enterprise-level networking concepts, including advanced routing, switching, and troubleshooting.

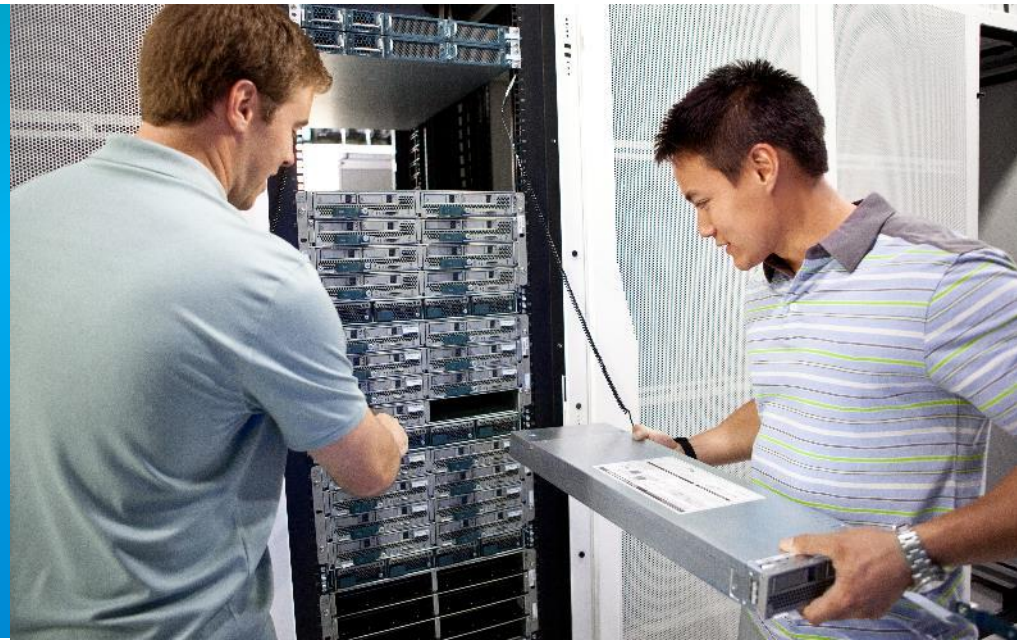
The curriculum integrates industry-relevant instructional approaches to help students prepare for career opportunities.

Prerequisites: CCNA R&S courses 1 - 4

Languages: English

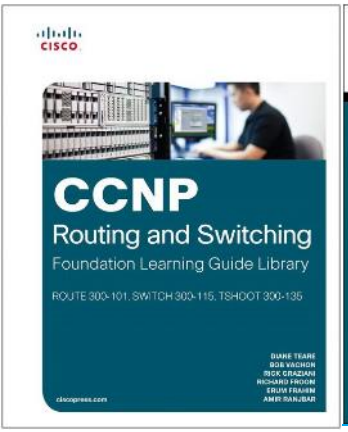
Course Delivery: Instructor led, textbook based

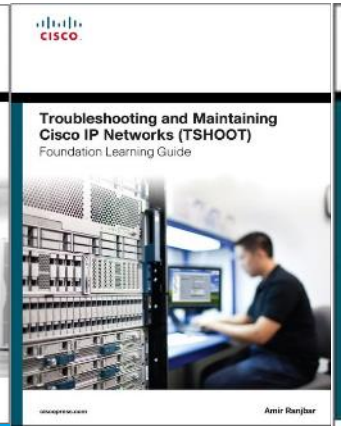
Estimated Time to Complete: 210 hours

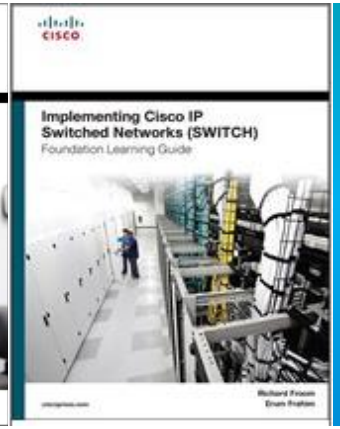


Career Prep

College students seeking hands-on practical experience, Cisco CCNP R&S certification, and career skills in advanced routing, switching, and troubleshooting.







Learning Components

- 3 courses: CCNP R&S ROUTE: Implementing IP Routing, CCNP R&S SWITCH: Implementing IP Switched Networks, and CCNP R&S TSHOOT: Troubleshooting and Maintaining IP Networks
- Hands-on labs
- Cisco Press textbooks
- Chapter exams and final exams

Security

Why Security?

The demand for security experts has grown three times faster than the demand for other information and communication technology professionals.

Our security courses equip students with the skills needed to protect networks from those with malicious intent to help ensure the integrity and availability of data and services.

Career Prep

Our security courses teach the core concepts and skills needed to secure and protect computer networks and explore career opportunities.

CCNA Security aligns with the Cisco CCNA Security certification.

Intro to Cybersecurity

CCNA Security PT

Introduction to Cybersecurity

Course Overview

Introduction to Cybersecurity covers trends and career opportunities in the growing field of computer network security

It features presentations and panel discussions delivered by cybersecurity professionals and industry experts.

Prerequisites: None

Languages: English

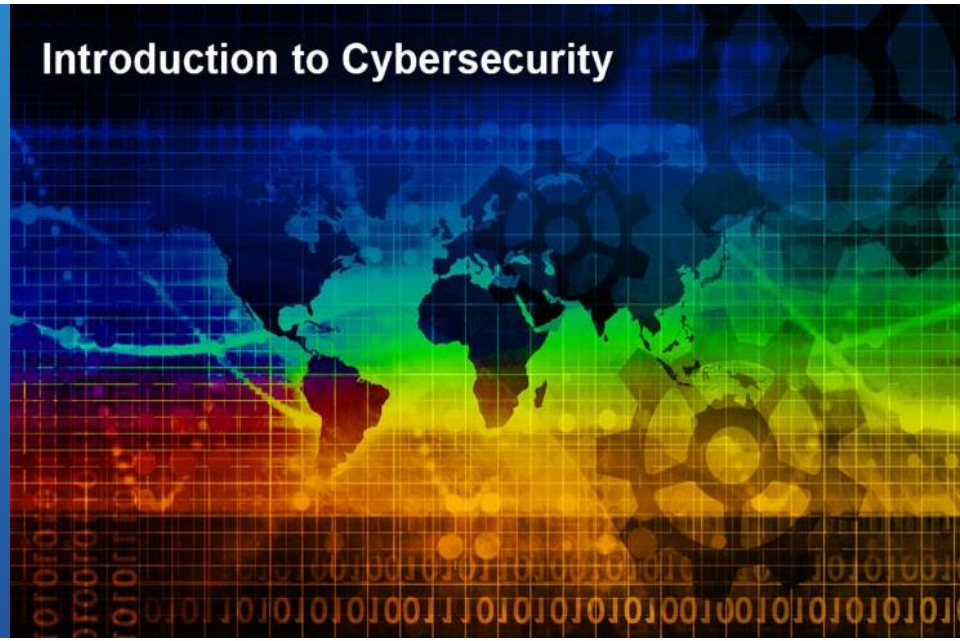
Course Delivery: Instructor led or self paced

Estimated Time to Complete: 15 hours

Recommended Next Course: CCNA R&S Introduction to Networks

Career Prep

Upper secondary and junior college students interested in learning about trends, certifications, and career opportunities in the cybersecurity field.



Learning Components

- 8 modules
- Video presentations and panel discussions
- Activities that reinforce learning
- Pre-test, 8 quizzes, and final exam
- Links to related resources

CCNA Security

Course Overview

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

It emphasizes the practical application of the skills needed to design, implement, and manage network security systems

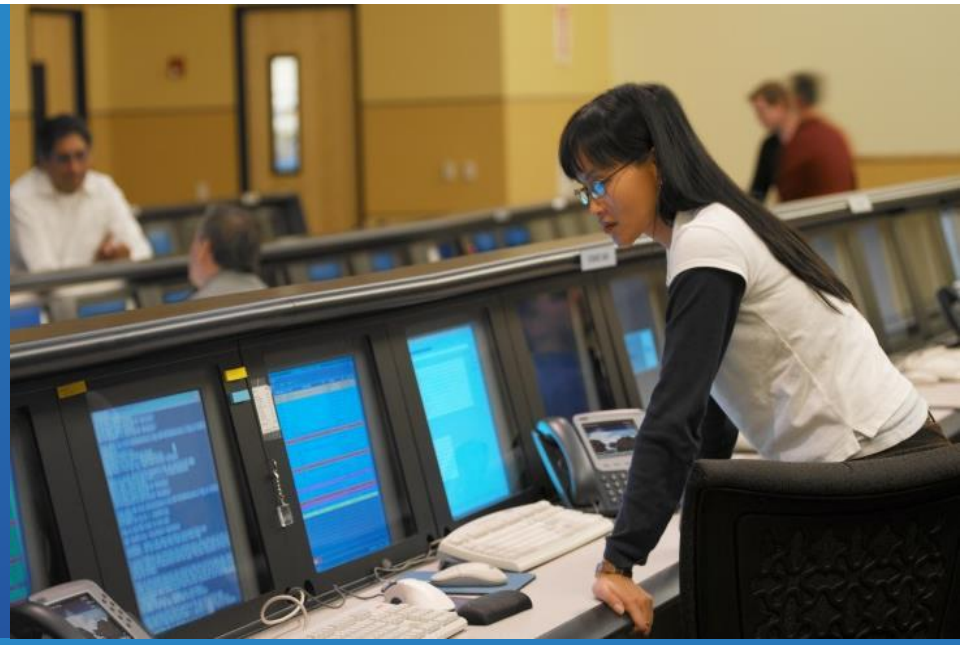
Prerequisites: CCNA R&S: Routing and Switching Essentials or equivalent knowledge

Languages: English

Course Delivery: Instructor led

Estimated Time to Complete: 70 hours

Recommended Next Course: CCNP



Career Prep

CCNA R&S students interested building security and data protection expertise for the Cisco CCNA Security career certification and jobs as network security specialists.

Learning Components

- 11 chapters, quizzes, and chapter exams
- 13 Cisco® Packet Tracer activities and one Packet Tracer Practice Skills Based Assessment (SBA)
- 16 hands-on labs
- One each: pre-test, certification practice exam, practice final, final exam and skills-based assessment

Technology

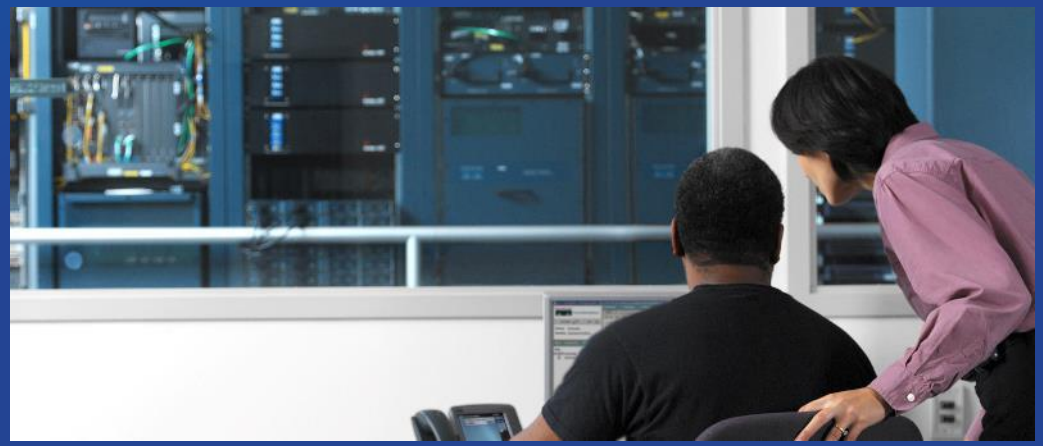
Why Technology?

Our Technology content is developed by a community of NetAcad instructors and covers concepts related to computer networks, such as cloud computing and wireless technologies.

Instructors may use these learning materials to create courses for students.

Career Prep

These learning resources are designed to expand knowledge of networking-related technologies and provide an overview of technologies students may encounter in their careers.



- Voice Primer PT
- Cloud Primer
- Collaboration Primer
- Mobility Fundamentals Series PT

Community Developed Primers

Voice Primer

Cloud Primer

Collaboration Primer

Supplemental learning content developed by NetAcad instructors that provides a foundational overview of essential information and communication technologies. Can be used to create and teach courses.

Topics Covered

Common voice terminology and concepts

Advantages of voice over IP (VoIP) systems

Learning Components

- Cisco Packet Tracer lab to configure Cisco Unified Communications Manager Express
- 2 modules with instructional slides and labs

Prerequisites: CCNA R&S ITN and RSE (CCENT)
Languages: English
Estimated Time to Complete: 8 hours

Topics Covered

Cloud computing and underlying technologies in consolidation, virtualization, and automation

Benefits of cloud computing technologies

Learning Components

- Videos
- Case studies
- Instructional slides
- Links to additional resources

Prerequisites: CCNA R&S ITN and RSE (CCENT)
Languages: English
Estimated Time to Complete: 40 hours

Topics Covered

Fundamentals of telephony and collaboration

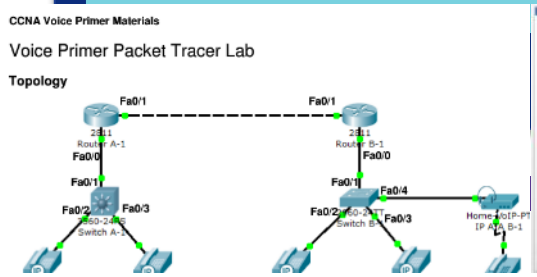
Implementing Voice over IP technologies on routers

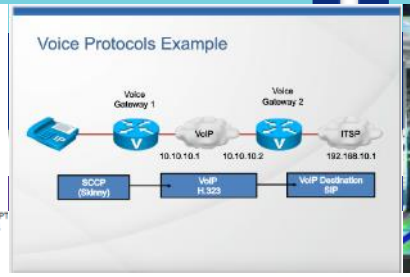
Mobile apps and Cisco TelePresence

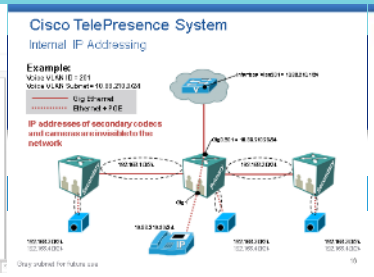
Learning Components

- Multimedia
- Labs
- Formative assessments

Prerequisites: CCNA R&S ITN and RSE (CCENT)
Languages: English
Estimated Time to Complete: 60 hours







Mobility Fundamentals Series

Series Overview

Starting with Wireless Technology Standards, the Mobility Fundamentals series teaches students about wireless and mobility technologies in the Internet of Everything.

Topics covered in these instructor-developed courses include wireless LAN design and mobility applications.

Prerequisites: IT Essentials or CCNA R&S 1-2

Languages: English

Course Delivery: Self paced

Estimated Time to Complete: 1.5 hour (each course)

Recommended Next Course: Mobility Fundamentals Series: Wireless LAN Networks (next in the Mobility Series)

Career Prep

Builds foundational wireless and mobility technology career skills for current IT Essentials or CCNA R&S students interested in learning more about the Internet of Everything.

Learning Components

- Several modules of multimedia content
- Video recordings featuring NetAcad instructors
- Activities that reinforce learning, including Cisco Packet Tracer activities
- Assessments, including module quizzes
- Certificates of completion for each module

Cisco Packet Tracer

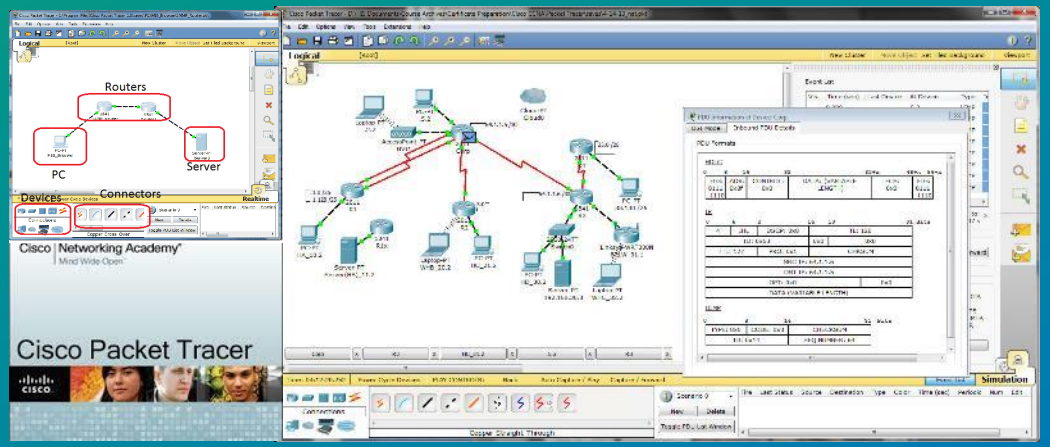
Why Packet Tracer?

The Cisco Packet Tracer simulation tool allows students to experiment with network behavior in a virtual environment. It supplements physical networking equipment by allowing students to create virtual networks with unlimited devices; encouraging practice, discovery, and troubleshooting.

As an integral part of the NetAcad learning experience, Packet Tracer provides simulation, visualization, authoring, assessment, and collaboration capabilities and facilitates the teaching and learning of complex technology concepts.

Career Prep

The Packet Tracer simulation-based learning environment promotes the development of essential career skills ranging from teamwork and critical thinking to creative problem solving.



- Cisco Packet Tracer (PT)
- Packet Tracer Know How
- PT Mobile Android
- PT Mobile iOS

Packet Tracer Know How Series

Packet Tracer 101

As the first of the Packet Tracer Know How series of community developed courses, Packet Tracer 101 is designed for new users of Packet Tracer for self-study and familiarization with the tool.

Topics covered:

- The navigation of main user interfaces
- Difference between logical views and physical views
- How to build a simple network topology
- How to complete a Packet Tracer activity

Learning Components

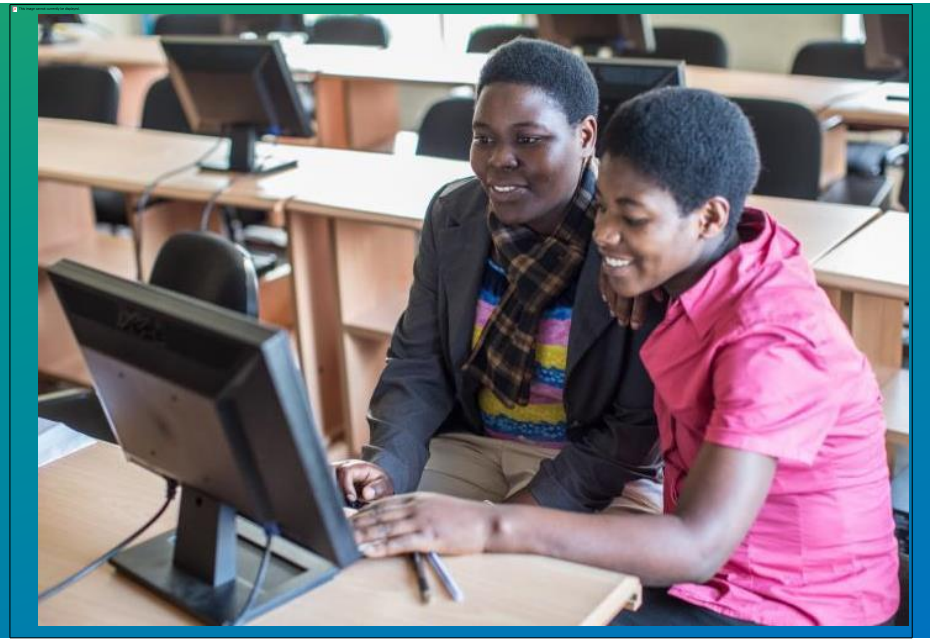
- 3 chapters
- Files and demos
- 1 hands-on learning activity
- 1 quiz

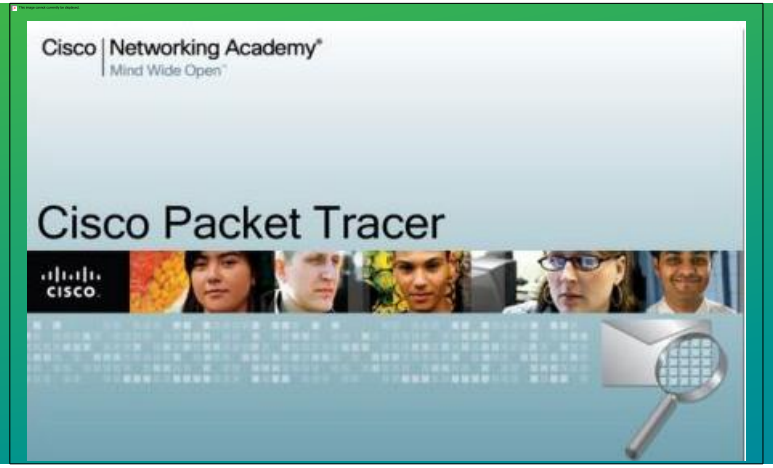
Prerequisites: None

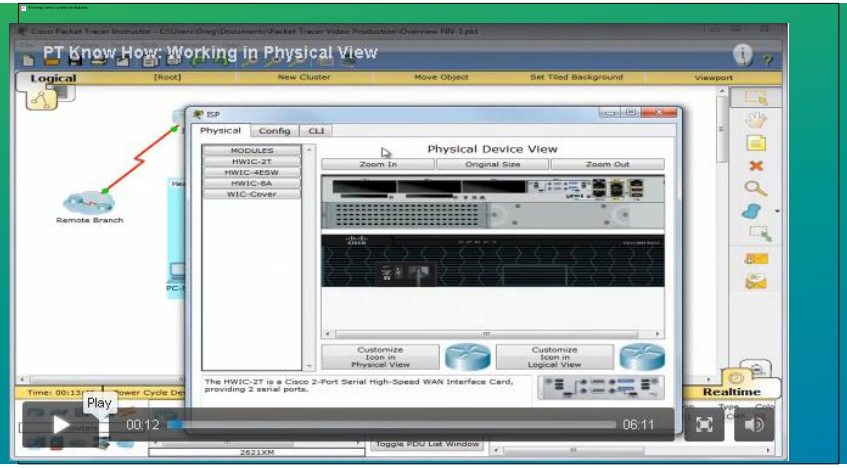
Languages: English

Course Delivery: Self-Paced

Estimated Time to Complete: 1 hour







Series Overview

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

Internet of Everything

Why IoE?

As the number of networked connections between people, processes, data, and things grows exponentially, it's essential to understand the technologies that enable the Internet of Everything (IoE), and how increased connectivity creates new opportunities to excel and improve business processes, and address some of the world's greatest challenges.

These courses broaden students' thinking beyond core networking and technology concepts.

Career Prep

Students explore the technologies that underpin the IoE and learn about millions of career opportunities that are emerging from data centers, cloud computing, big data, and the Internet of Things.

- Intro IoE Summary Podcast
- Introduction to the Internet of Everything PT
- Smart Grid (German)
- IoE: Connecting Data
- IoE: Connecting People & Process
- IoE: Connecting Things

Introduction to the Internet of Everything Summary Podcast

Series Overview

This podcast series provides an introduction to the future of the Internet, where a network foundation connects billions of things and trillions of gigabytes of data, enhancing our decision making and daily interactions.

It can be used to prepare for the Introduction to the Internet of Everything course.

Prerequisites: None

Languages: English

Delivery Method: mp3 files

Estimated Time to Complete: 2.5 hours

Recommended Next Course: Introduction to the Internet of Everything

Career Prep

Anyone seeking to develop a broad understanding of trends, technologies, and career opportunities in the Internet of Everything.

Learning Components

- 5 modules featuring a panel of IoE experts
- Links to related resources
- Downloadable mp3 files

Introduction to the Internet of Everything

Course Overview

The Introduction to the Internet of Everything (Intro to IoE) course introduces learners to the technologies that support the IoE, and the career and social opportunities created by the growing number of networked connections between people, processes, data, and things.

Prerequisites: None

Languages: Chinese-Simplified & Traditional, English, French, Japanese, Portuguese-BR, Russian, Spanish

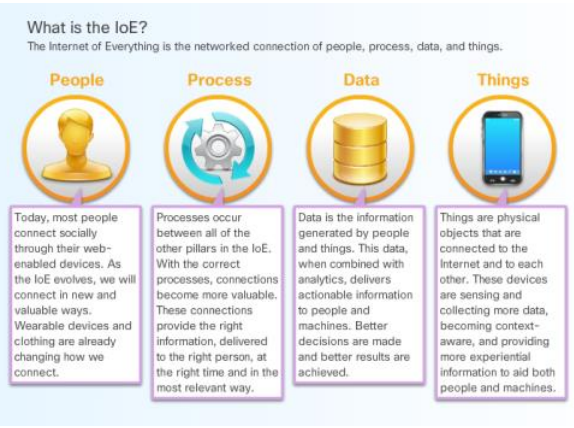
Course Delivery: Instructor led or self paced

Estimated Time to Complete: 20 hours

Recommended Next Course: IT Essentials or CCNA R&S Introduction to Networks

Career Prep

Secondary school through university students seeking an overview of trends, technologies, and career opportunities in the Internet of Everything.



Learning Components

- 5 modules of interactive content featuring IoE experts
- Activities, videos, and simulations to enhance the learning experience
- Pre-test, module quizzes, and a final exam

Smart Grid

Overview

Smart Grid presents the necessary devices and their function used in a smart gird home system. The course discusses connecting smart meters with a home area network (HAN), integrating smart meter gateways in a wide area network (WAN), and installation procedures and security aspects based on German technical regulations.

Prerequisites: None, basic competence in electrical engineering recommended

Languages: German

Course Delivery: Instructor Led

Estimated Time to Complete: 80 hours

Recommended Next Course: CCNA R&S

Career Prep

Builds foundational smart grid career skills for current employees in electrical installation and those in initial vocational education and training for a career in electrical installation and electrical engineering.

Learning Components

- Several modules of multimedia content
- Activities that reinforce learning
- Cisco Packet Tracer activities (under construction)
- Assessments, including module quizzes

Entrepreneurship

Why Entrepreneurship?

In addition to technology skills, business owners and professionals need entrepreneurial skills such as creative thinking, communication, business management, and problem solving skills.

Our Entrepreneurship offerings help students develop essential skills to successfully launch new ventures or excel within team environments.

They broaden students' thinking beyond core networking and technology concepts.

Career Prep

Our Entrepreneurship courses help students develop an entrepreneurial mindset and cultivate the habits and skills needed for success in the Internet of Everything.

- Entrepreneurship
- Be Your Own Boss

Entrepreneurship

Course Overview

Entrepreneurship supplements the ICT skills gained in CCNA R&S curriculum by teaching business and financial skills, behaviors, and attitudes, to help students develop an entrepreneurial mindset.

Students learn by completing a series of interactive case studies.

Prerequisites: None

Languages: Arabic, Chinese-Traditional and Simplified, English, and Spanish

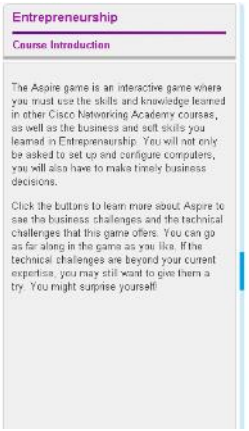
Course Delivery: Self paced or instructor led

Estimated Time to Complete: 15 hours

Recommended Next Course: CCNA R&S ITN

Career Prep

High school through college students seeking to supplement ICT expertise with entrepreneurial thinking, business development, and financial management skills.



Learning Components

- 7 modules
- Modules feature interactive case studies and videos that reinforce business management skills
- Quizzes for each module
- Discussion board

Be Your Own Boss

Course Overview

The Be Your Own Boss Technopreneur Series provides the guidelines, insights, and advice needed to launch successful tech ventures.

The series features video presentations by entrepreneurs from around the world who share lessons learned along their journeys to success.

Prerequisites: None

Languages: English

Course Delivery: Self paced

Estimated Time to Complete: 8 hours

Recommended Next Course: Entrepreneurship

Career Prep

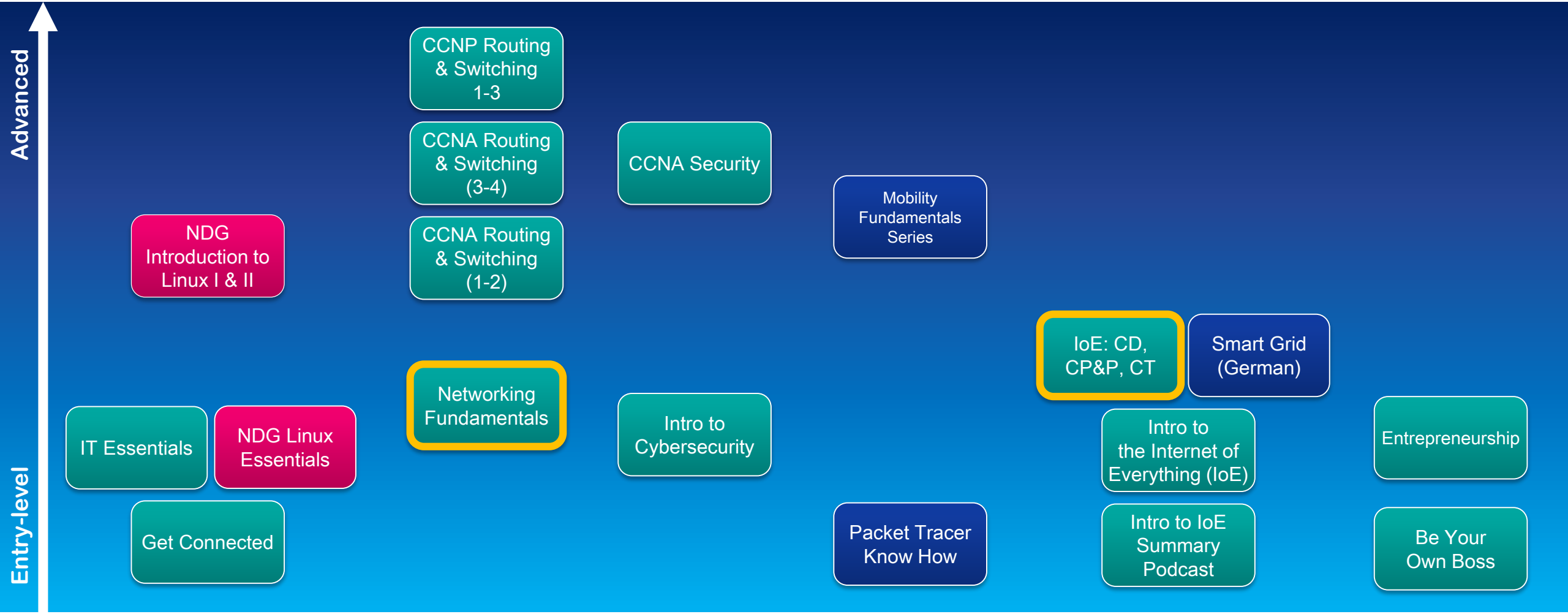
Technology students interested in developing the entrepreneurial skills and habits needed to launch and grow a successful technology business.

Learning Components

- 8 modules
- Technopreneurs sharing personal success stories in video format
- Quizzes and surveys for each module

Course Proficiency

Nov 2015



Appendix

Public-Private Partnerships Make It Work

Cisco Networking Academy Program Features

Interactive content and learning tools

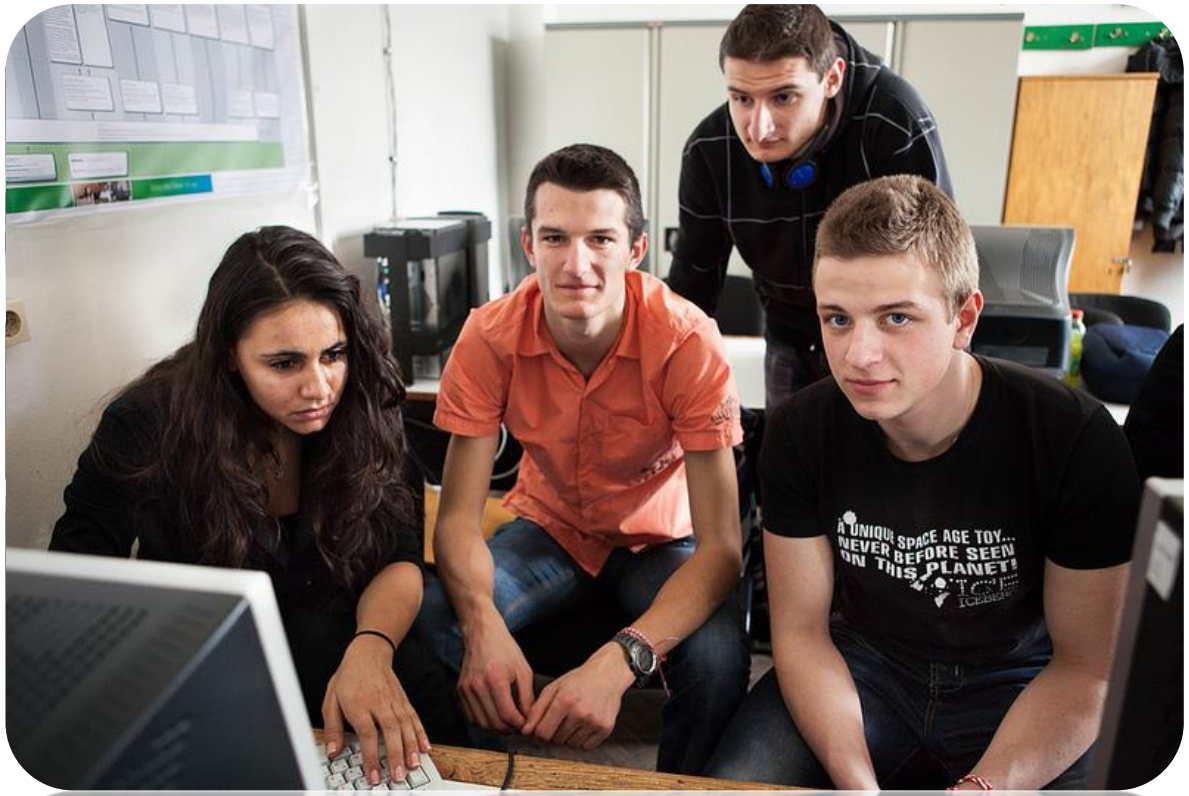
Discounts on equipment and certification exams

Instructor training, online communities, and professional development

Online teaching resources and gradebooks

Formative and summative assessments that provide immediate, detailed feedback

Global Support Desk and network of Academy Support Centers



Innovations in Teaching and Learning

Instant Feedback

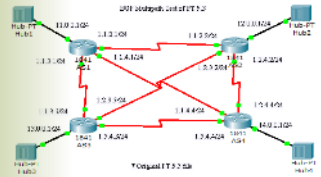
Interactive online courses measure student comprehension with quizzes and activities, and provide detailed feedback

Gaming

Integrates virtual worlds, scoring and competitions (Cisco Aspire)

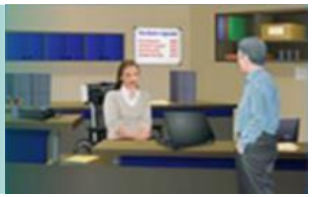
Simulations

Extend student practice beyond physical lab equipment (Cisco Packet Tracer)



Case Studies

Real world projects to practice business, financial, and career century skills (Entrepreneurship)



Social Media

Learning outside the classroom on NetSpace, Facebook and Twitter