Course and Technical Updates

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20 April 2018, Fulda
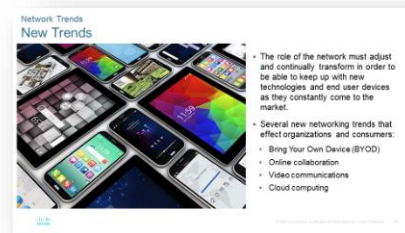
#NetAcadIPD

Agenda

- CCNA R&S Slides

- Equipment

- Self-Enroll Page

- IoT Fundamentals

- Packet Tracer

- Emerging Technologies Workshops

- Python Essentials

- Cybersecurity

- Instructor Professional Development

Updated CCNA R&S Instructor PPT slides Now available!

- Content Enhancement

- Better instructional flow

- New 16:9 template

Download Now!

https://www.netacad.com/group/resources/ccna-rs-itn/6.0
https://www.netacad.com/group/resources/ccna-rs-rse/6.0
https://www.netacad.com/group/resources/ccna-rs-scaling/6.0
https://www.netacad.com/group/resources/ccna-rs-connect/6.0

Special Thanks:
Frank Torres
Bernadette O'Brien
Elaine Horn
Bob Vachon
Cheryl Schmidt
Joni Johnson
Milt Camille

Equipment

2900 ISR Router Replaced by 4321 ISR

- The 2900 Series router End-of-Sale date is December 9, 2017 and we will continue to support products for five years after that.

- Replacement router is the Cisco ISR 4321 (2GE,2NIM,4G FLASH,4G DRAM,IPB). Updated Equipment List by curriculum by following this path – NetAcad.com -> Resources -> Marketing and Program Resources -> Equipment Information -> Equipment Lists by Curriculum.

Cisco ASA 5505 Replaced with the ASA 5506

Table 1.　End-of-Life Milestones and Dates for the Cisco ASA 5505 Adaptive Security Appliance

Milestone	Definition	Date
End-of-Life Announcement Date	The date the document that announces the end-of-sale and end-of-life of a product is distributed to the general public.	February 24, 2017
End-of-Sale Date: HW, License	The last date to order the product through Cisco point-of-sale mechanisms. The product is no longer for sale after this date.	August 25, 2017
Last Ship Date: HW, License	The last-possible ship date that can be requested of Cisco and/or its contract manufacturers. Actual ship date is dependent on lead time.	November 23, 2017
Last Date of Support: HW	The last date to receive applicable service and support for the product as entitled by active service contracts or by warranty terms and conditions. After this date, all support services for the product are unavailable, and the product becomes obsolete.	August 31, 2022

For current Equipment list go to NetAcad.com → Resources → Marketing and Program Resources → Equipment Information → Equipment Lists by Curriculum → CCNA Security Equipment List.xlsx

http://www.cisco.com/c/en/us/products/collateral/security/asa-5505-adaptive-security-appliance/eos-eol-notice-c51-738642.html

CISCO

Cisco 1941 ISR EoL

- End-of-Life announced on 31 March
  - End of Sale: 29 September 2018
  - End of Support: 30 September 2023

- May wish to recommend to purchase the 4321 due to the IOS-XE support and future requirements of Network Progammability

- We are looking for other possible replacement options

- New equipment that gets added to the official list is regression tested

Self-enroll Page for Cisco Academies

The Self-Enroll Page

New Time-Saving Option for Enrolling Students in Self-Paced Courses

Instructors

Create a self-enroll page including custom image and description.

Students

Go directly to the self-enroll page to join the course.

Simple Setup

1 Setup course and publish.

2 Select Add Students.

Add Students

3 Choose Create Self-Enroll Page.

Add Students

Add Student
Add an individual student by providing an email and other info

Import CSV
Bulk import students by a specially formatted file

Import from Course
Bulk import students from previous courses into this one

Manage Seat Tokens
Create tokens that allow your students to log in to NetAcad

Create Self-Enroll Page
Create a web page for students to enroll themselves in this class

Cancel

4 Add description and image, choose language & make public.

Self-Enroll Page Settings

Course Details
This information will be displayed to your students

IoT 101
Introduction to the Internet of Everything
Introduction to the Internet of Everything (English - 1.10 Self-Paced)
Apr 3 - Jun 30, 2017, Cisco Systems
Instructors: David Calvin
Introduction to IoT self-paced course

Options
Language for Enroll Now form, Get Started email and student's profile

Language: English

Draft at https://liferay-test.netacad.../web/self-enroll/course-12188

Image (Optional)
Select a file in jpg, gif, or png format. Recommended resolution 200px x 200px x 72dpi. 1MB maximum size.

Browse Files

Browse... sample image.jpg

Description
This is any additional information you'd like to provide for your students, such as course catalog description. required

Introduction to IoT

Learn how the Internet of Things (IoT) and the digital transformation of business create new value and new job opportunities.

Course Summary

The **Introduction to IoT** course provides an overview of key concepts and challenges related

body

Cancel   Make Public   Save Draft

12

Courses in Self-Paced Format

Networking

- **Packet Tracer 101**
- **Packet Tracer 101 Mobile**

Digital Literacy
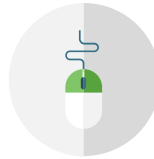
- **Get Connected**

Business Literacy
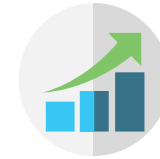
- **Entrepreneurship**

IoT

- **Introduction to IoT**
- **Introduction to the Internet of Everything**

Security

- **Introduction to Cybersecurity**
- **Cybersecurity Essentials**

IoT Fundamentals

Digital Transformation across Countries and Companies

IoT merges physical and virtual worlds, creating smart environments

Smart City

Smart Hospital

Smart Highway

Smart Factory

Raspberry Pi Zero – a $5 computer

IoT Fundamentals Course Summary

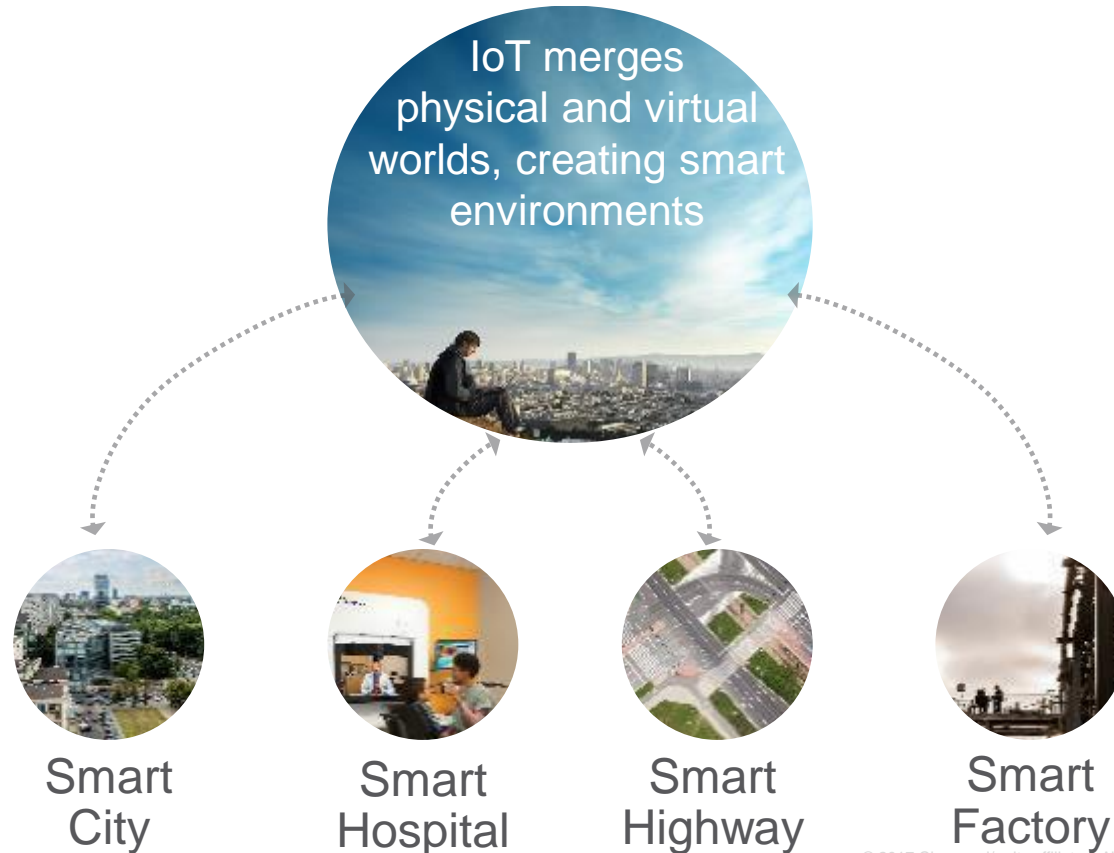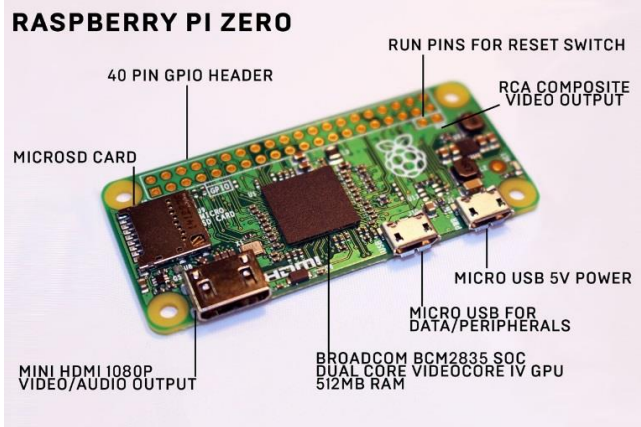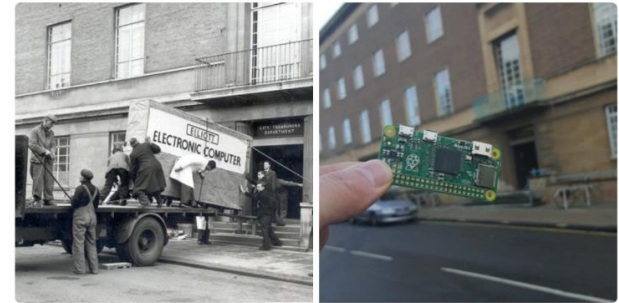|	Course Overview	Benefits	
Connecting Things	Students learn how to securely interconnect sensors, actuators, microcontrollers, single-board computers, and cloud services over IP networks to create an end-to-end IoT system.	Students will develop multi-disciplinary skillsets required to prototype an IoT solution for a specific business case with a strong focus on the security considerations for emerging technologies.	Course Delivery: Instructor-led Estimated Time to Complete: 40-50 hours
Big Data & Analytics	Students will learn how to use Python data libraries to create a pipeline to acquire, transform and visualize data collected from IoT sensors and machines.	The transformative element of any IoT system is the data that can be collected from it. Thus the ability to extract data and using data analytics techniques to gain insights increases employability.	Course Delivery: Instructor-led Estimated Time to Complete: 40-50 hours
Hackathon Playbook	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.	Student reinforce and deepen their multidisciplinary IoT and data skills by defining, designing, prototyping and presenting an IoT solution to a panel of industry experts and peers.	Course Delivery: Instructor-led Estimated Time to Complete: 20-30 hours

IoT Fundamentals: Connecting Things

Kursüberblick

Der Kurs fördert Kompetenzen, die erforderlich sind, um ein IoT-System, bestehend aus Sensoren, Aktoren, Mikro-Controller, Einplatinen-Computer und Cloud-Diensten, anzuwenden, unter Berücksichtigung von Sicherheitsaspekten in Betrieb zu nehmen und instand zu setzen.

Eignung

Förderung interdisziplinärer Kompetenzen, die zur Entwicklung eines IoT Prototyps notwendig sind. Die Entwicklungsszenarien orientieren sich an realen Geschäftsprozessen. Der Fokus liegt vor allem auf technologischen Innovationen und der Betrachtung der Maßnahmen zur Erhaltung der Datensicherheit.

Kompetenzentwicklung

- Konzepte, Chancen und Herausforderungen der digitalen Transformation durch Anwendung von IoT-Systemen verstehen und erklären können.
- Entwicklung eines IoT-Systems durch die Vernetzung von Sensoren/Aktoren, Mikro-Controlleren, Einplatinen-Computer und Cloud-Services (Cisco Spark restful API)

- Datensicherheit im Rahmen einer IoT-Lösung erfassen.
- Die Auswirkungen der Digitalisierung in verschiedenen Branchen (z. B. Fertigung, Energiewirtschaft, Gesundheitswesen und Verkehrswesen erfassen.
- Verwendung von Simumlationswerkzeugen, um IoT-Systeme zu entwickeln.

Merkmale

Zielgruppe: Sekundarstufe II, Berufsschule, Berufsfachschule, Technikerschule, Hochschule, Universität

Voraussetzungen: Grundlagen der Programmierung, der Netzwerktechnik und der Elektrotechnik.

Verfügbare Sprachen: Englisch

Lehrmethode: Blended Learning

Geschätzter Zeitaufwand: 40-50 Stunden

Empfohlener Aufbaukurs: IoT Fundamentals: Big Data & Analytics oder Hackathon Playbook

Instruktoren-Training: erforderlich

IoT Fundamentals:
Big Data & Analytics

Kursüberblick

Der Kurs fördert Kompetenzen, die erforderlich sind, Instrumente zu entwickeln, die Sensor-und Maschinendaten sammeln, anpassen und visualisieren. Die Lernenden arbeiten dabei mit Python-Bibliotheken.

Eignung

Wesentliche Bestandteile eines IoT-System sind dessen gesammelte Daten. Die berufliche Kompetenz gewonnene Daten strukturiert und versiert zu analysieren steigert die Beschäftigungsfähigkeit.

Lehr- und Lernmaterialien

- Mit Hilfe von Python Sensordaten auslesen und in einer SQL-Datenbank sichern.
- Datensätze mit Hilfe von Bibliotheken zur Datenanalyse, bereinigen, verändern und integrieren.
- Datensätze mit Hilfe von Biliotheken zur Visualisierung in Echtzeit darstellen.
- Grundprinzipien moderner und skalierbarer Big Data Plattform, wie Hadoop, erfassen.
- Geeignete Präsentationsmethoden, zur Darstellung der gewonnene Erkenntnisse aus Datenerfassung, anwenden.
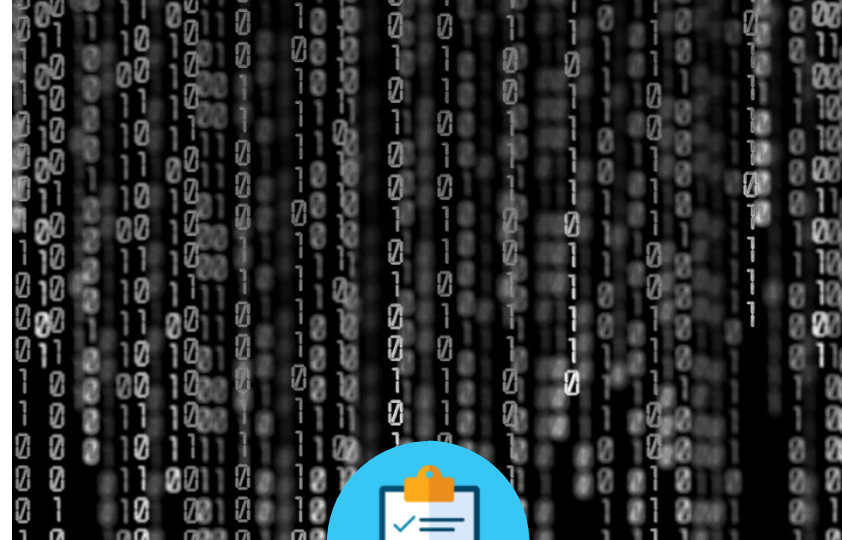
Merkmale

Zielgruppe: Sekundarstufe II, Berufsschule, Berufsfachschule, Technikerschule, Hochschule, Universität

Voraussetzungen: IoT Fundamentals: Connecting Things

Verfügbare Sprachen: Englisch

Lehrmethode: Blended Learning

Geschätzter Zeitaufwand: 40-50 Stunden

Empfohlener Aufbaukurs: IoT Fundamentals: Hackathon Playbook

Instruktoren-Training: erforderlich

Cisco Prototyping Lab

Tool Overview

The Cisco Prototyping Lab is a comprehensive learning environment created by Cisco for Networking Academy students to learn and practice key aspects of the foundational IoT technologies. Using an engaging, hands-on approach, it supports both the learning and creative phases of the Networking Fundamentals curriculum.

Career Prep

Provides an easy to use, comprehensive learning environment using real devices, code, coding tools and data that students use to create the physical interconnection of an end-to-end IoT and the logical data pipeline to acquire, analyze and present data.

Learning Components

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

Features

As an integral part of the Networking Academy learning experience, Cisco Prototyping Lab provides

- Interactive labs using Jupyter Notebook
- Visual programming with Blockly
- Device programming with Python
- Data visualization & analytics
- Connected applications via APIs
- Rapid Prototyping

Packet Tracer

Tool Overview

Packet Tracer is an innovative simulation and visualization tool used for lectures, labs, games, homework, assessments, and competitions. It is embedded in these courses:

- CCNA Routing and Switching
- CCNA Security
- IT Essentials
- Intro to the Internet of Things
- Mobility Fundamentals

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.

Learning Components

- Cisco Packet Tracer (PT)
- PT Mobile Android
- PT Mobile iOS
- PT Games

Features

As an integral part of the Networking Academy learning experience, Packet Tracer provides

- Simulation
- Visualization
- Authoring
- Assessment
- Collaboration capabilities and facilitates the teaching and learning of complex technology concepts.

Packet Tracer 7

Version 7.1 Highlights

- Bluetooth
- Patch panels and wall sockets
- Physical Environments
- Smart devices, sensors and actuators for Home, City, Industry, Power
- Edit existing or program your own devices
- Python, Javascript, Blockly
- Home Gateway and IoT Server
- Rules for devices to work together
- Real world communication
- Real API communication

An IoT System

Home Gateway

devices and appliances

CoAxialSplitter-PT
Coaxial Splitter0

Cable-Modem-PT
H-Cable-M

DLC100
Home Gateway

MCU-PT
MCU0

Fan
Home-Fan

Window
H-Window-Opener

OFF 0 C
Cool   Heat

Thermostat
H-Thermostat

HUMITURE
56

Humiture Monitor
H-Humidity

SMARTPHONE-PT
Home-Smartphone

AC
IoE2

Humidifier
Humidifier

Lawn Sprinkler
H-Sprinkler

0.00

Water Level Monitor

Water Level Monitor
H-Water-meter

TEMPERATURE
0.00 C

Temperature Monitor
H-Temperature-s

Furnace
IoE3

All devices that are inside the boxes are completely new in PT7.0

MCU and SBC

- Digital and analog I/O
- Works with simple sensors and actuators
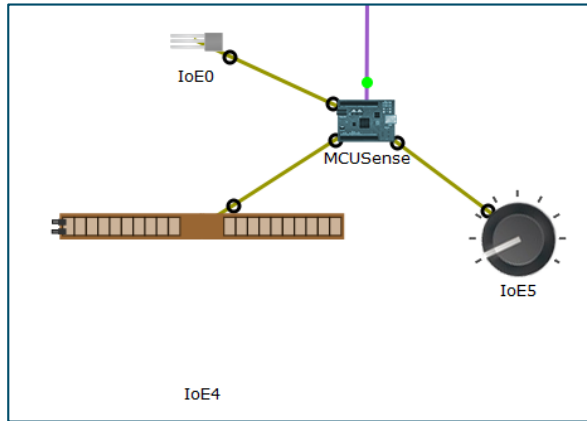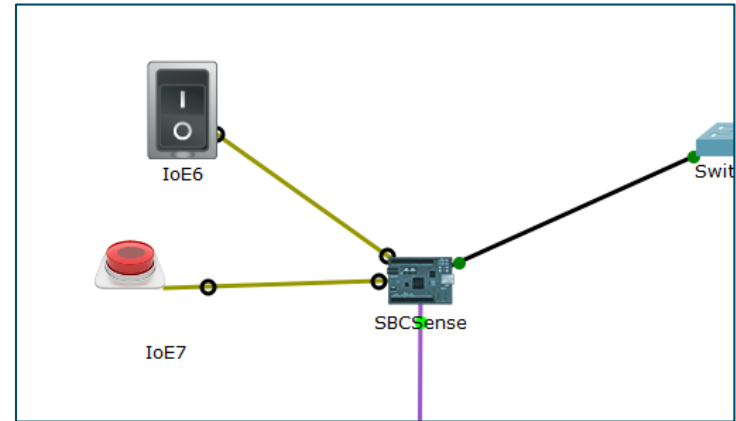- Limited processing power
- No OS, no file system, no "Desktop"

- It's like… Arduino!

- Digital I/O, no analog input
- Can't work with simplest sensors
- Higher processing power
- Has OS and file system, has "Desktop"

- It's like… Raspberry Pi!

Real Network Communication

- In PT7, your smart device can communicate with real world using TCP, UDP, and HTTP protocols. Functions that help to do that described in Python API (PT7 → Help → Contents):

Real HTTP (External Network Access)	Package = realhttp			
Function	**Return Type**	**Description**		**Example**
RealHTTPClient()	RealHTTPClient	Creates a Real HTTP Client.		http = RealHTTPClient()
get(url)	N/A	Gets an URL.		http.get("http://www.cisco.com")

Sidebar navigation:
Shape Tests
Multiuser
IPC
Internet of Things
Using Things
Creating Things
JavaScript API
Python API
Visual API

- By default, external network communication is disabled. Enable it in Options → Preferences → Miscellaneous → External Network Access

External Network Access
☑ Enable External Network Access from Device Scripts

Connect to real data sources
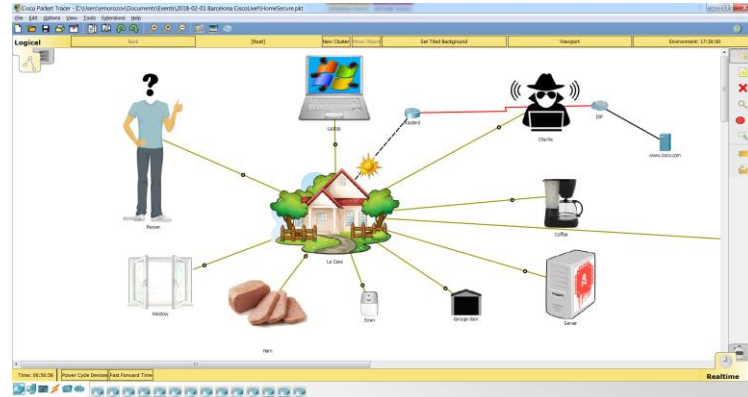
 Use any data sources online

 Read data from your sensors

 Interact with REST APIs

DDoS and Other Attacks

URL Interpretation attack - The parameters of the URL are adjusted so that information beyond what is intended can be retrieved from the web server.

SQL Injection attack - aims to modify a database or extract information from it. An SQL query with parameters from the URL is fed to the database that has the ability to alter the data.

Buffer Overflow attack - When an application awaits users input, it allocates some memory for it. The attackers flood this space by writing arbitrary data so that the memory stack is full.

PT-quiz @ Cisco Live!

messages

Spark API

Raspberry PI

PT API

messages

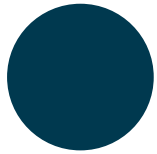EUGENE'S SANDBOX
CiscoLive! 2018 Academy Day
conradobelenguer@gmail.com shared a photo
13:19

Emerging Technologies Workshops

WHY: A New Era in Networking

WHAT: Emerging Technologies Workshops

HOW: Getting Ready for Emerging Tech Workshops

Digital Disruption

Will impact all major Industries.
Average time of disruption=3 years.
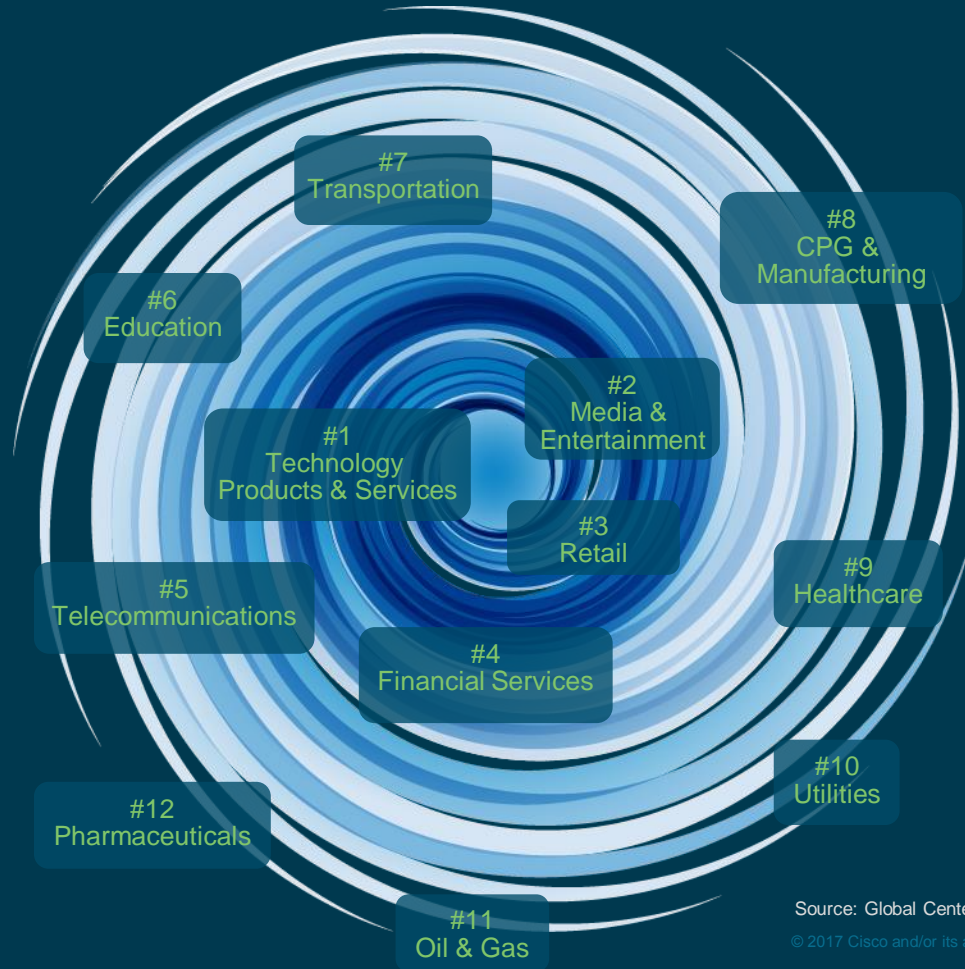
75% of businesses will become digital by 2020

#7 Transportation

#8 CPG & Manufacturing

#6 Education

#2 Media & Entertainment

#1 Technology Products & Services

#3 Retail

#9 Healthcare

#5 Telecommunications

#4 Financial Services

#10 Utilities

#12 Pharmaceuticals

#11 Oil & Gas

NetAcad Focus in Response

Everything becomes **connected**
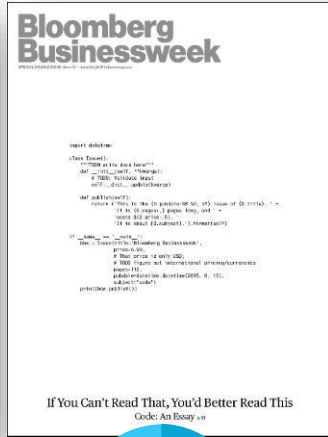
Everything becomes **software-based**

Everything generates **data**

Everything can be **automated**

Everything needs to be **secured**

Networking

Programmability

Security

WHAT:
Emerging Technologies Workshops

Emerging Technologies Workshops

Flexibly Add Foundational Emerging Skills into Existing Career Pathways

Emerging Technologies Workshops

- Networking
- Security
- IoT & Data Analytics
- OS & IT
- Programming

Job Family Specialization

Apply Skills

Foundational

Career-Ready

Collaborate for Impact

Workshops Support a Variety of Technology Domains

* Available within 12 months

	Exploratory	Foundational	Career-Ready
Collaborate for Impact		🏃 **Introduction to Packet Tracer** **Packet Tracer** **Hackathons** **Prototyping Lab** **Internships**	
📶 **Networking**		👨‍💼 **Networking Essentials** 🏃 **Mobility Fundamentals** 👨‍💼 **Emerging Tech Workshop:** Network Programmability with Cisco APIC-EM*	👨‍💼✅ **CCNA R&S:** Introduction to Networks, R&S Essentials, Scaling Networks, Connecting Networks 👨‍💼✅ **CCNP R&S:** Switch, Route, TShoot
🔒 Security	🏃 **Introduction to Cybersecurity**	🏃 **Cybersecurity Essentials**	👨‍💼✅ **CCNA Security** 👨‍💼✅ **CCNA Cyber Ops***
🌐 IoT & Analytics	🏃 **Introduction to IoT**	👨‍💼 **IoT Fundamentals:** Connecting Things, Big Data & Analytics, IoT Security* Hackathon Playbook	
🌐 OS & IT	🏃 **NDG Linux Unhatched**	🏃✅ **NDG Linux Essentials** 👨‍💼 **IT Essentials**	✅ **NDG Linux I** ✅ **NDG Linux II**
💻 **Programming**		✅ **CLA: Programming Essentials in C** ✅ **CPA: Programming Essentials in C++** ✅ **PCAP: Programming Essentials in Python** 👨‍💼 **Emerging Tech Workshop:** Experimenting with REST APIs using Cisco Spark*	✅ **CLP: Advanced Programming in C*** ✅ **CPP: Advanced Programming in C++**
📊 Business	🏃 **Be Your Own Boss**	🏃 **Entrepreneurship**	
💡 Digital Literacy	🏃 **Get Connected**		

NetAcad Offering Comparison

Component	NetAcad Foundational & Career-Ready Courses	Emerging Technologies Workshops
Curriculum Instructional Goal	Gateway to Entry-level Networking and IT careers	Take students from Buzzwords to Hello World on latest technologies
Instructional Hours	30-70 hours	8 hours
Hands-on Labs	Real equipment in the classroom, Packet Tracer simulations	Hands-on experience on enterprise software using Cisco online platforms and Cisco DevNet sandboxes
Assessments	Formative, Performance-based, Comprehensive summative	Formative, Short summative
Instructor Resources	Instructor PPTs	Instructor PPTs + Activity Transcript

Emerging Technologies Workshop
Network Programmability with Cisco APIC-EM

Workshop Overview

The Network Programmability with Cisco APIC-EM workshop introduces you to the basic competencies to operate and automate management tasks on a controller-based network.

Benefits

In this workshop, students will learn and practice Python programming skills and tools, culminating in live interactions with the APIs on Cisco programmable controllers using the Cisco DevNet Sandbox.

Learning Outcomes

- Understand the value, set-up and use of software concepts and tools relevant to network programmability (Python scripting, Git, JSON, Postman, APIs).
- Describe a different approach to software-defined networking (SDN), including central application policy control.

- Use the Cisco DevNet Sandbox to learn how to interact with programmable devices using real-world APIs on Cisco APIC-EM programmable controllers.
- Understand the value of joining professional communities of practice to working in the network programmability domain. Participate in Cisco DevNet, GitHub, and Stack Overflow.

Features

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

Prerequisites: Basic programming, CCENT level networking

Languages: English

Course Delivery: Instructor-led

Equipment: FREE! Uses free online software tools

Estimated Time to Complete: 8 hours

Recommended Insertion Points: After CCNA R&S course 2, with CCNA Security or CCNP R&S

Instructor Training: Required, self-paced option available

Emerging Technologies Workshop
# Experimenting with REST APIs using Cisco Spark

Workshop Overview

The Experimenting with REST APIs using Cisco Spark workshop introduces you to the basic competencies needed to create applications and automate tasks using REST APIs, the most popular architecture for software integration in IT.

Benefits

In one day students will learn and practice Python programming skills and tools, culminating in live interactions with the APIs on Cisco collaboration software using the Cisco Spark online platform.

Learning Outcomes

- Understand value, set-up and use the most prevalent software language (Python) and tools for network programmability (JSON, Postman).
- Understand the importance of participating in professional communities of practice when doing work in the software domain.

- Join and engage in 3 professional communities of practice: GitHub, Stack Overflow and Cisco DevNet.
- Describe the relevance of REST APIs architecture and perform basic software integration and automation using real-world APIs on an enterprise collaboration platform (Cisco Spark).
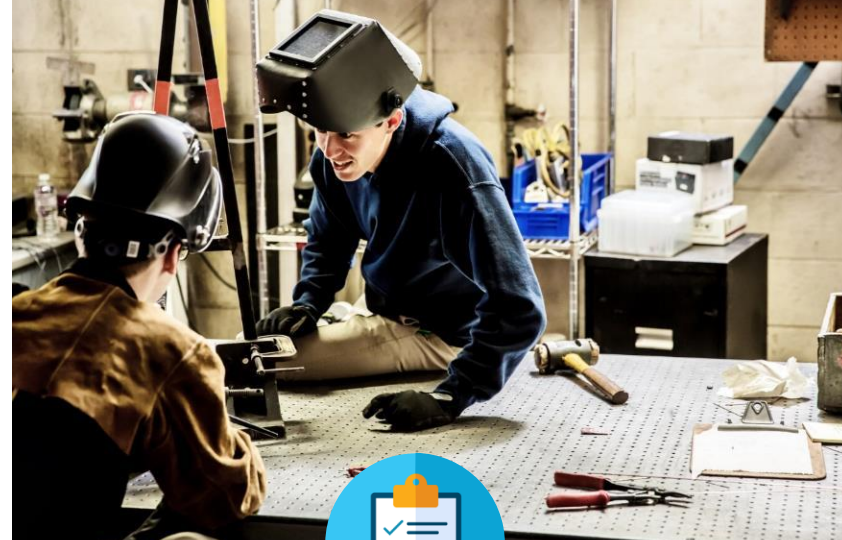
Features

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

Prerequisites: Basic programming

Languages: English

Course Delivery: Instructor-led

Equipment: FREE! Uses free online software tools

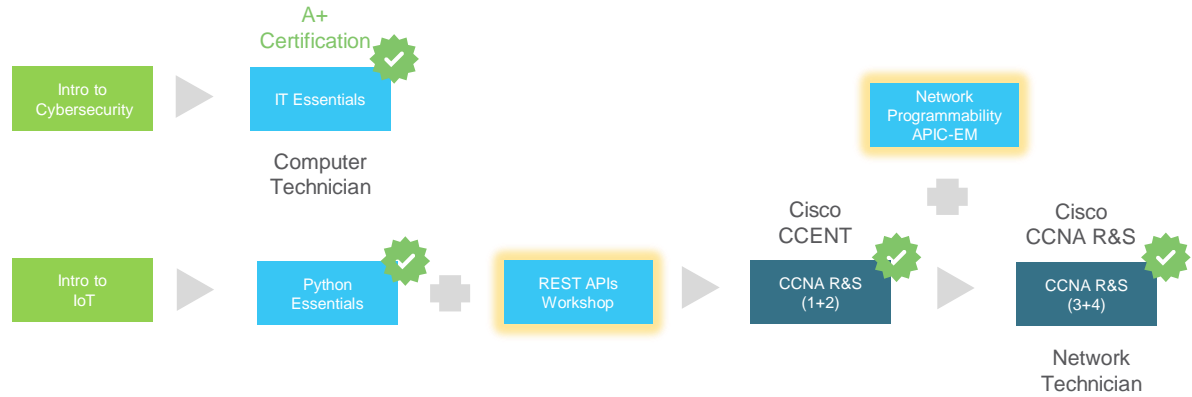**Estimated Time to Complete**: 8 hours

Recommended Insertion Points: PCAP Programming Essentials in Python, Connecting Things

Other Insertion Points: IT Essentials, CCNA R&S ITN

Instructor Training: Required, self-paced options available

Workshop Pathways

Network Developer Professional Track

Intro to Cybersecurity

A+ Certification ✓

IT Essentials

Computer Technician

Network Programmability APIC-EM

Cisco CCENT

Cisco CCNA R&S

Intro to IoT

Python Essentials ✓

REST APIs Workshop

CCNA R&S (1+2) ✓

CCNA R&S (3+4) ✓

Network Technician

Security Analyst Track

Foundational Courses

A+ Certification ✓

Cisco CCNA Cyber Ops ✓

Intro to Cybersecurity

Intro to IoT

Python Programming

Networking Essentials

IT Essentials

Cybersecurity Essentials

CCNA Cyber Ops

Security Analyst

REST APIs Workshop

✓ Certification

HOW:
Getting Ready for
Emerging Tech Workshops

Instructor Resources

PPT
Instructor Powerpoints, Overview Powerpoint
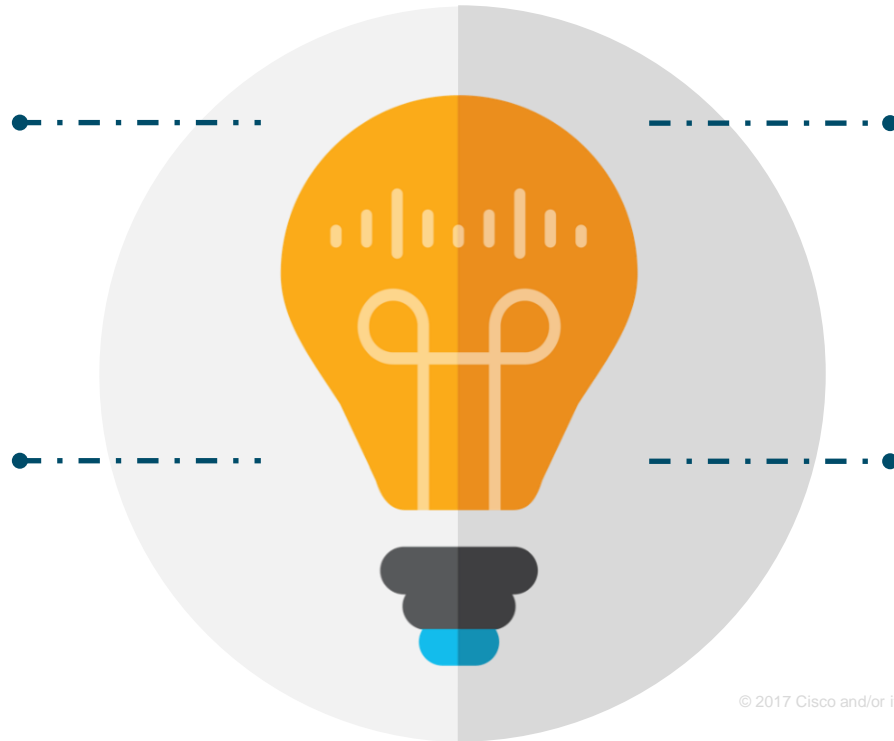
FAQ
Frequently Asked Questions

S&S
Scope & Sequence Document

Plus
Quick Setup Guide, Additional information & resources

Emerging Technologies Workshops
Instructor Training Requirements

Recommended Qualifying Skills & Experience

Network Programmability

- Networking skills
  (min. CCENT)
- Basic Programming skills (Python, C++, C, Java)

REST APIs

- Basic Programming skills (Python, C++, C, Java)

Instructor Temperament

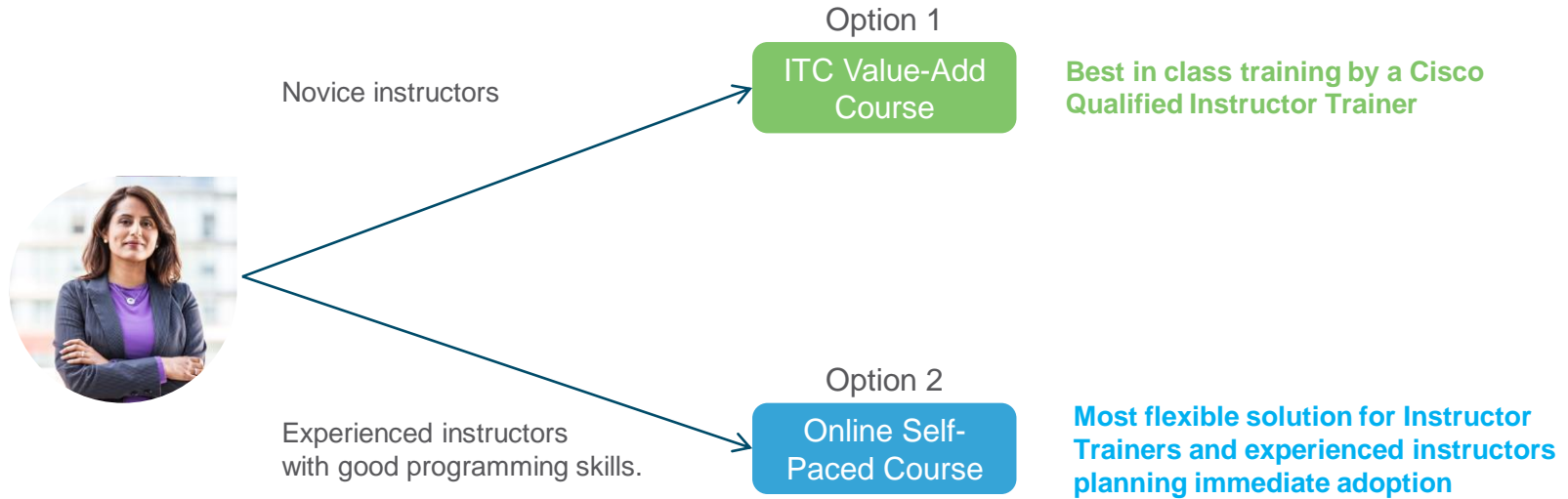- Comfortable working with latest technologies that rapidly evolve

Instructor Training & Support:

1. Academies must align with an ASC.
2. Instructor Training is required. It is estimated 8 hour duration, depending on the previous experience of the instructor.
3. Instructors can enroll in a self-paced basic training course on their own or via a blended learning approach at an ITC.

Emerging Technologies Workshops
Instructor Training 2-Prong Approach

Novice instructors

Option 1

ITC Value-Add Course

Best in class training by a Cisco Qualified Instructor Trainer

Experienced instructors with good programming skills.

Option 2

Online Self-Paced Course

Most flexible solution for Instructor Trainers and experienced instructors planning immediate adoption

+Option 3:
join a workshop training from Cisco

PCA: Programming Essentials in Python

Programming Essentials in Python

- Curriculum developed by a partner **Python Institute**

- Course free of charge to students, instructors and academies

- Instructor-led online curriculum

- Targeted to entry-level to mid IT professionals

- Pre-requisites: None

PCA: Programming Essentials in Python

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

With PCA: Programming Essentials in Python you 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.

Learning Components

- 5 modules of interactive instructional content
- More than 30 practice labs
- Built-in online tool to perform labs and practice
- Chapter and Final exams

Certification Aligned

Features

Target Audience: High-school and college students

Prerequisites: None

Instructor Training Required: No

Languages: English

Course Delivery: Instructor-led

Estimated Time to Complete: 60-70 hours

Recommended Next Course: IoT Fundamentals, Networking Essentials, NDG Linux Essentials

CISCO

PCA: Programming Essentials in Python
Course Design

- Easy-to-navigate graphical user interface

- 5 chapters, with chapter quizzes and chapter exams

- Welcome and exit surveys

- 35 practice labs

- Built-in online compiler

- 1 practice exam and 1 final exam

- Certificate of Completion (Statement of Achievement)

- Certification Exam Voucher (51% discount)

Certification is coming in 2018

Online Compiler

Instructions

Run the code

Reset activity

Download code

1.1.4.1 The print() function

📄 Sandbox

Objectives

- becoming familiar with the print() function and its formatting capabilities;
- experimenting with Python code.

Scenario

The print() command, which is one of the easiest directives in Python, simply prints out a line to the screen.

In your first lab, use the print() function to print the line "Hello, Python!" to the screen.

Having done that, remove the double quotes and run your code. Watch Python's reaction. What kind of error is thrown?

Then, remove the parentheses and run your code again. What kind of error is thrown at this time? Remember them - we're going to talk about them soon.

Print "Goodbye, Python!" to the screen to finish this lab.

```
1  print("Hello World")
```

Type the code here

Console >_   Clear

Hello World

Code output

Instructor training requirements

- <u>No</u> instructor training or skill test is required to teach Python Essentials.

- Recommendations

  - Academic institutions provide quality instructors and facilities

  - Instructors study the course material

Introduction to Cybersecurity 2.1

Course Overview

The Introduction to Cybersecurity course explores cyber trends, threats and staying safe in cyberspace, and protecting personal and company data.

Benefits

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.

Learning Components

- 5 modules
- Interactive and instructional content
- 8 Activities and 7 lab exercises that reinforce learning
- 4 quizzes and 1 final exam
- Links to related resources

cisco

Features

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

Prerequisites: None

Instructor Training Required: No

Languages: Chinese-S, English (2.1), French, German, Hebrew, Italian, Japanese, Spanish, Portuguese

Course Delivery: Instructor-led or Self-paced

Estimated Time to Complete: 15 hours

What's Changed In 2.1?

- Minor content updates
    - Recent security breach example
    - Add newly discovered wireless networks security vulnerability – KRACK
    - Update NIST standard for password
- Enhance course structure caters to public audience
    - Remove irrelevant content and terminologies
    - Simplifies certification references
- Improved Accessibility
- Bug fixes and link refreshes
- Refer to Release Notes for details

Cybersecurity Essentials

Course Overview

Cybersecurity Essentials covers foundational knowledge and essential skills for all cybersecurity domains including information security, systems security, network security, ethics and laws, and defense and mitigation techniques used in protecting businesses.

Benefits

This course is recommended for students planning to study any CCNA certification. It provides foundational security skills for entry-level networking and security roles.

Learning Components

- 8 chapters
- 34 interactive activities, 10 Cisco Packet Tracer Activities, 12 hands-on labs that reinforce learning

- 8 chapter quizzes, 1 final exam
- Links to related resources

Features

Target Audience: Secondary and 2-year college vocational students

Prerequisites: Introduction to Cybersecurity

Instructor Training Required: No

Languages: English

Course Delivery: Instructor-led and Self-paced

Estimated Time to Complete: 30 hours

Recommended Next Course: CCNA R&S Introduction to Networks

CISCO

Course Design

- Easy-to-navigate graphical user interface

- 8 chapters with modifiable chapter quiz

- 34 interactive activities

- 10 Cisco Packet Tracer activities, require PT 6.3.x or above

- 12 hands-on labs, only PC required for lab

- 1 dynamic final exam

- 8 chapters containing accessible text and media text videos with closed captioning.

- Available in English

- Certificate of Completion
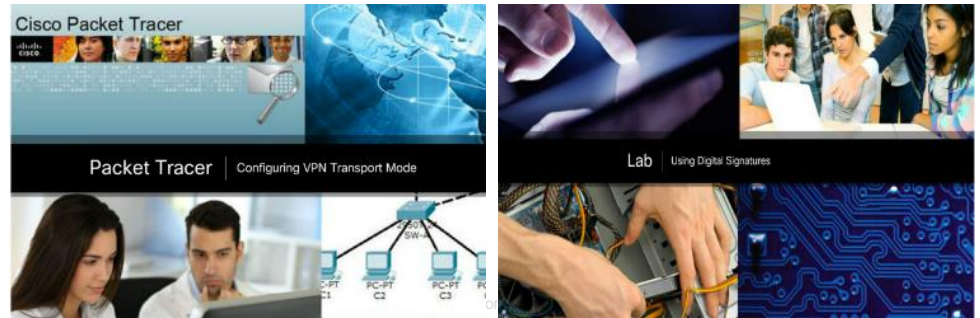
Cyber Essentials

Chapter 0
Course Introduction

Chapter 1
Cybersecurity – A World of Wizards, Heroes, and Criminals

Chapter 2
The Cybersecurity Sorcery Cube

Chapter 3
Cybersecurity Threats, Vulnerabilities, and Attacks

Chapter 4
The Art of Protecting Secrets

Chapter 5

Cisco Packet Tracer

Packet Tracer | Configuring VPN Transport Mode

Lab | Using Digital Signatures

CCNA Cyber Ops

Introduction to Cybersecurity ▶ Cybersecurity Essentials ▶ CCNA Cybersecurity Operations   Security Analyst, Incident Responder

Exploratory — Consider a career in technology

Foundational — Prepare for a technology career

Career-Ready — Step into your technology career
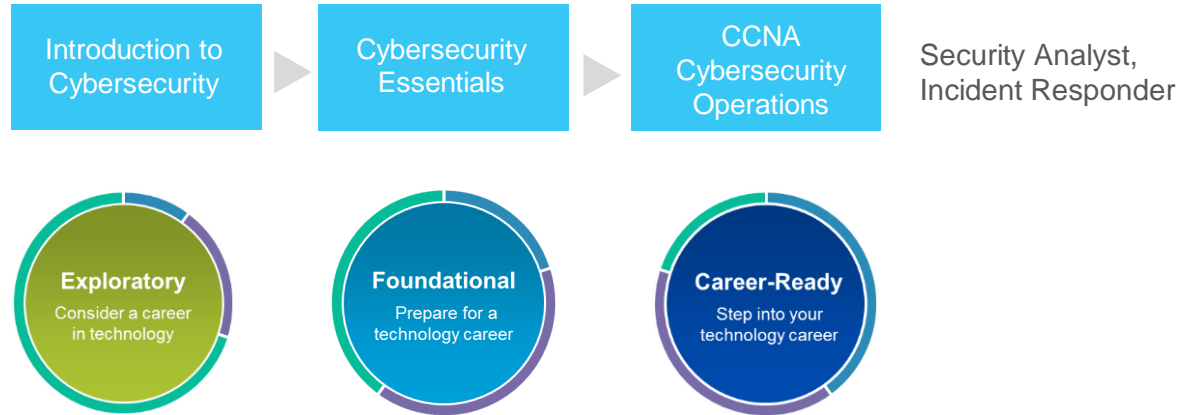
The Networking Academy Learning Portfolio
Current & Planned

- ✅ Aligns to Certification
- 🧑‍🏫 Instructor Training required
- 🏃 Self-paced

* Available within 12 months

	Introduction to Packet Tracer	Packet Tracer	Hackathons	Prototyping Lab	NetRiders	Internships

	Exploratory	Foundational	Career-Ready
Networking		🧑‍🏫 **Networking Essentials** 🏃 **Mobility Fundamentals**	🧑‍🏫✅ **CCNA R&S:** Introduction to Networks, R&S Essentials, Scaling Networks, Connecting Networks 🧑‍🏫✅ **CCNP R&S:** Switch, Route, TShoot
Security	🏃 **Introduction to Cybersecurity**	🏃 **Cybersecurity Essentials**	🧑‍🏫✅ **CCNA Security** 🧑‍🏫✅ **CCNA Cyber Ops**
IoT	🏃 **Introduction to IoT**	🧑‍🏫 **IoT Fundamentals:** Connecting Things, Big Data & Analytics, Hackathon Playbook	
OS & IT	🏃 **NDG Linux Unhatched**	🏃✅ **NDG Linux Essentials** ✅ **IT Essentials**	✅ **NDG Linux I** ✅ **NDG Linux II**
Programming		✅ **CLA: Programming Essentials in C** ✅ **CPA: Programming Essentials in C++** **PCA: Programming Essentials in Python**	✅ **CLP: Advanced Programming in C*** ✅ **CPP: Advanced Programming in C++***
Business	🏃 **Be Your Own Boss**	🏃 **Entrepreneurship**	
Digital Literacy	🏃 **Get Connected**		

August 2017

CCNA Cybersecurity Operations Curriculum

Overview

CCNA Cyber Ops 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. It emphasizes the practical application of the skills needed to maintain and ensure security operational readiness of secure networked systems.

Career Prep

The skills developed in the curriculum prepare students for a career in the rapidly growing area of cybersecurity operations working in or with a security operations center (SOC) in entry-level job roles.

Aligned with two certification exams
- 210-250 SECFND
- 210-255 SECOPS

Learning Components

- 13 chapters of interactive content, quizzes, and chapter exams

- Labs, and hands-on labs using virtual machine environment (PC required, no other equipment required)

- Cisco® Packet Tracer activities (PT 7.0)

- Certification practice exams, practice final, final exam and skills-based assessment

Features

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

Prerequisites: None

Languages: English

Course Delivery: Instructor-led

Estimated Time to Complete: 70 hours

Course Structure

Chapter	Title	Theme	Student Profile
1	Cybersecurity and the Security Operations Center	Introduction	
2	Windows Operating System	OS Fundamentals	Students with ITE, Linux Essentials knowledge
3	Linux Operating System		
4	Network Protocols and Services	Networking Fundamentals	Students with CCNA R&S (ITN) knowledge
5	Network Infrastructure		
6	Principles of Network Security	Cybersecurity Fundamentals	Students with Cybersecurity Essentials and CCNA Security knowledge
7	Network Attacks: A Deeper Look		
8	Protecting the Network		
9	Cryptography and the Public Key Infrastructure		
10	Endpoint Security and Analysis		
11	Security Monitoring	Cybersecurity Operations	
12	Intrusion Data Analysis		
13	Incident Response and Handling		

Instructor Professional Development

Global IPD Week May 7-11

- **Program Updates**
  - Catch up on the latest strategies and products from Cisco Networking Academy!

- **Technical Session Topics**
  - Understanding SNMPv3
  - Multilayer Switching
  - Cybersecurity - requirements, challenges and growing demand for Security-professionals
  - Using Real-World APIs in Packet Tracer
  - Behind the Scenes: Creating Netacad Curriculum and Assessments
  - Best Practices in Teaching IT Essentials
  - Cybersecurity Essentials course Deep Dive

- **German Sessions**
  - Programm Updates
  - Eine Technische Sitzung – YOUR session!

Join us for sessions on 7 -11 May 2018.

Click below to register for live sessions, review recordings and download resources. Click the **Archive** button below to see the sessions from previous GIPD Weeks.

English Sessions

Program Updates
8 May
[Check the Agenda]

Technical Sessions
9-10 May
[Check the Agenda]

Localized Languages

العربية	中文	Русский
Español	Français	Italiano
Türkçe	Português	Sinhalese
Hindi	Telugu	Gujarati
Bangla	Bahasa	Deutsch
Українська	Polska	Hebrew

Session registration and recordings - http://cs.co/GIPD18