# Cisco Networking Academy Learning Portfolio

# Recent Updates and Future Roadmap

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Product Manager
Cisco Networking Academy
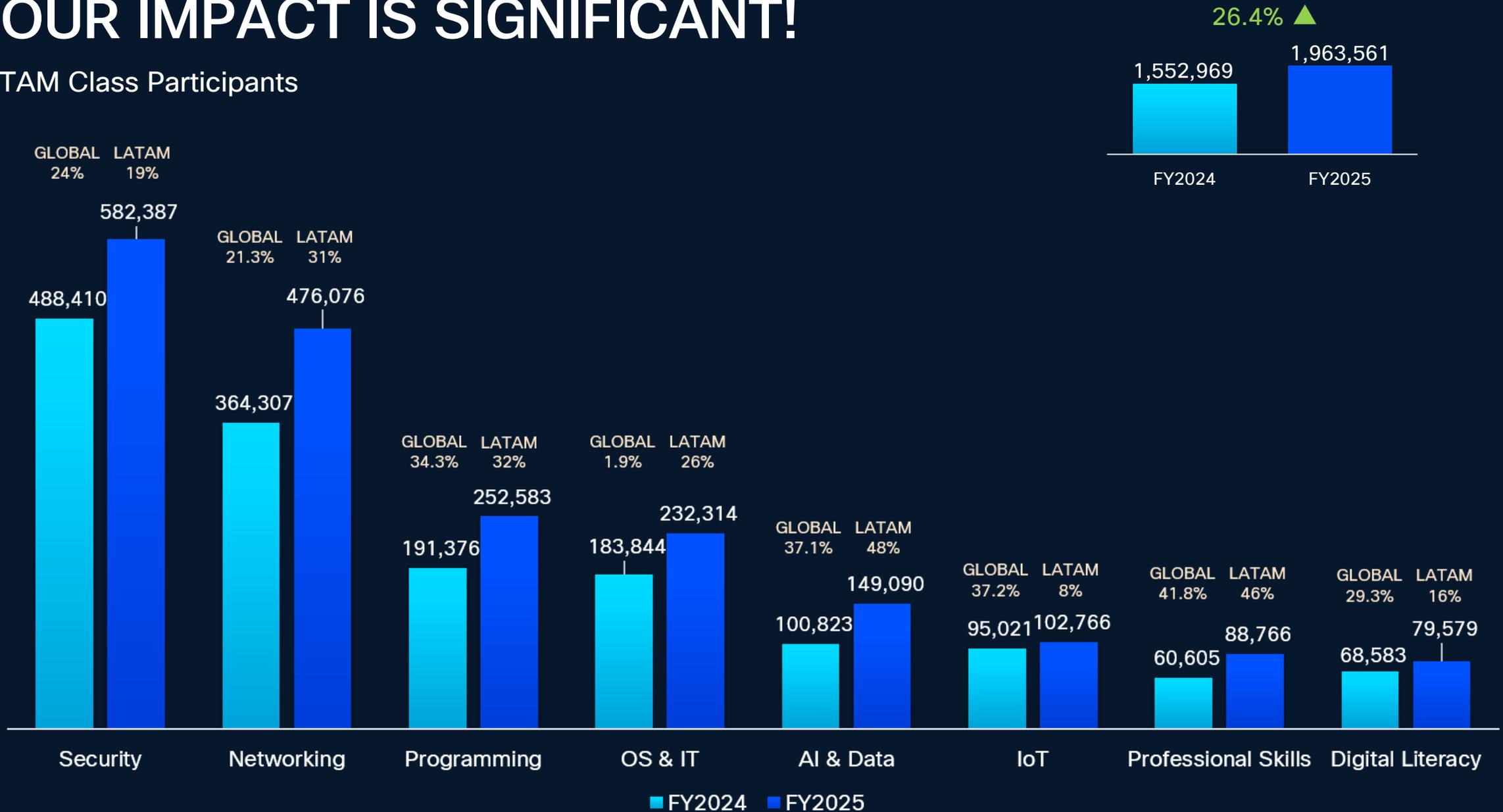
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# Agenda

**01    Quick Year in Review**

**02    Learning Portfolio Priorities**

**03    Learning Portfolio Plans**

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# Quick Review of the Last 12 Months

## 24
### New Curriculum Offerings

CCST IT Support series: Operating Systems Support, IT Customer
Support Basics, Security & Connectivity Support, Hardware & Upgrade
Support
IT Support Essentials
Apply AI: Analyze Customer Reviews
Introduction to Modern AI
ENSA Supplement Module
SRWE Supplement Module
Data Analytics Essentials
Digital Awareness
Using Computer & Mobile Devices
Create Digital Content, Communicate & Collaborate Online
Digital Literacy– Digital Safety & Security
Industrial Networking Essentials
CSS Essentials
HTML Essentials
Introduction to Greenhouse gas accounting for IT
Getting Ready to Teach Cybersecurity Essentials
Getting Ready to Teach Networking Essentials
Introduction to Switch Operation
Introduction to Switch Security
Cloud Managed Networking 101 with Cisco Meraki
Threat Intelligence 101 with Cisco Talos

## 59
### New Course Translations

| | | | |
|---|---|---|---|
| Arabic | 9 | Polish | 3 |
| Spanish | 7 | German | 2 |
| Portuguese | 6 | Ukrainian | 2 |
| French | 5 | Indonesian | 2 |
| Japanese | 5 | Korean | 2 |
| Simplified Chinese | 4 | Turkish | 1 |
| Romanian | 3 | Thai | 1 |
| Greek | 3 | Hungarian | 1 |
| Italian | 3 | | |

**Spanish**
• Ethical Hacker
• Data Analytics Essentials
• Introduction to Modern AI
• Using Computer & Mobile
  Devices
• Create Digital Content,
  Communicate
  and Collaborate Online
• Digital Safety and Security
  Awareness
• Learn Collection Digital Literacy

**Portuguese**
• Discovering Entrepreneurship
• Python Essentials 2
• Learn Collection for Python
  Essentials
• Digital Awareness
• Introduction to Modern AI
• Data Analytics Essentials

# Learning Portfolio Priorities

**Meet Learners Where They Are**

**Create Learning Paths That Lead to Compelling Careers**

**Deliver Engaging, Effective Learning Experiences**
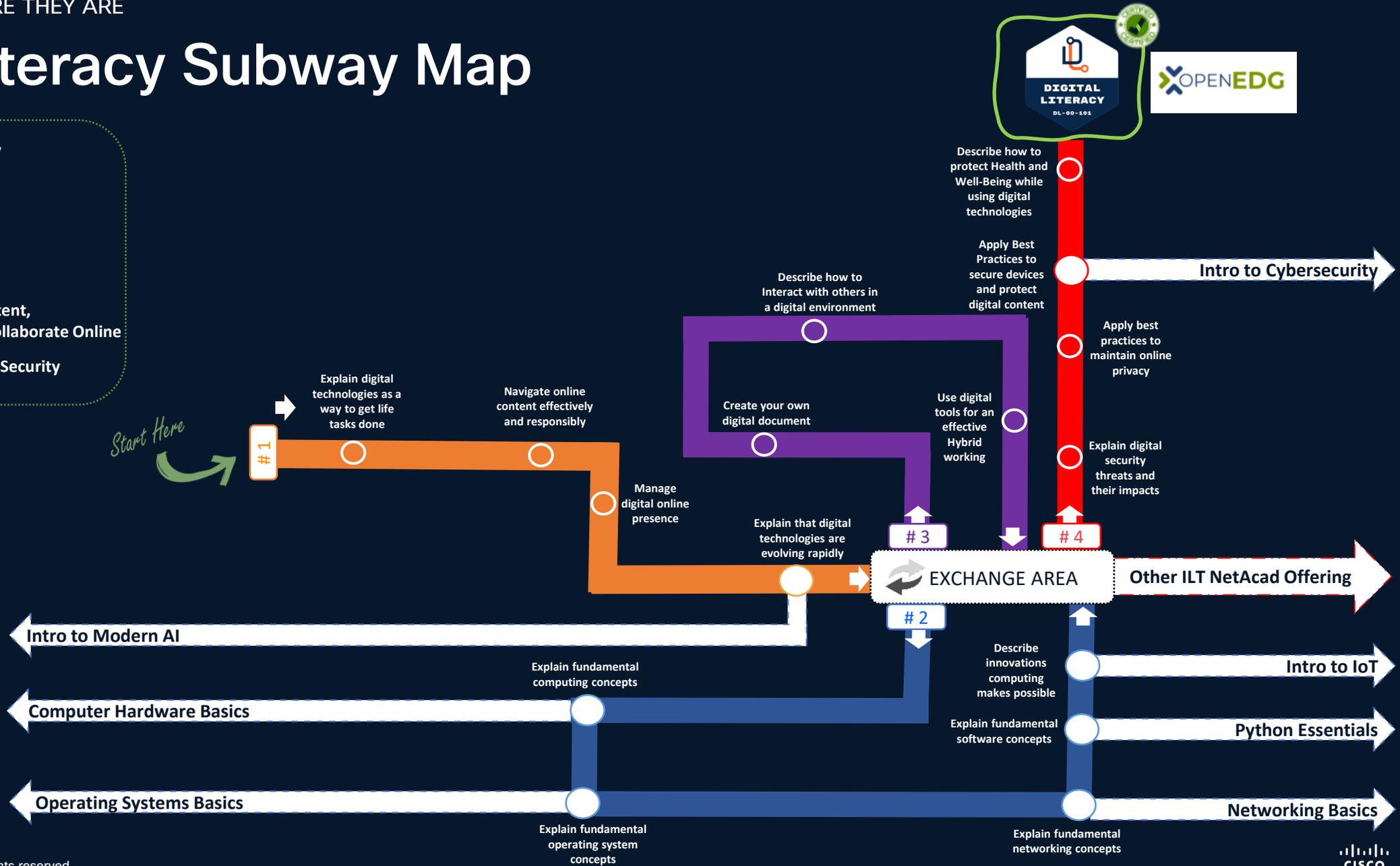
# Priority #1:
# Meet Learners Where They Are

MEET LEARNERS WHERE THEY ARE

# Digital Literacy Subway Map

DIGITAL LITERACY DL-00-101

OPENEDG

**Digital Literacy**
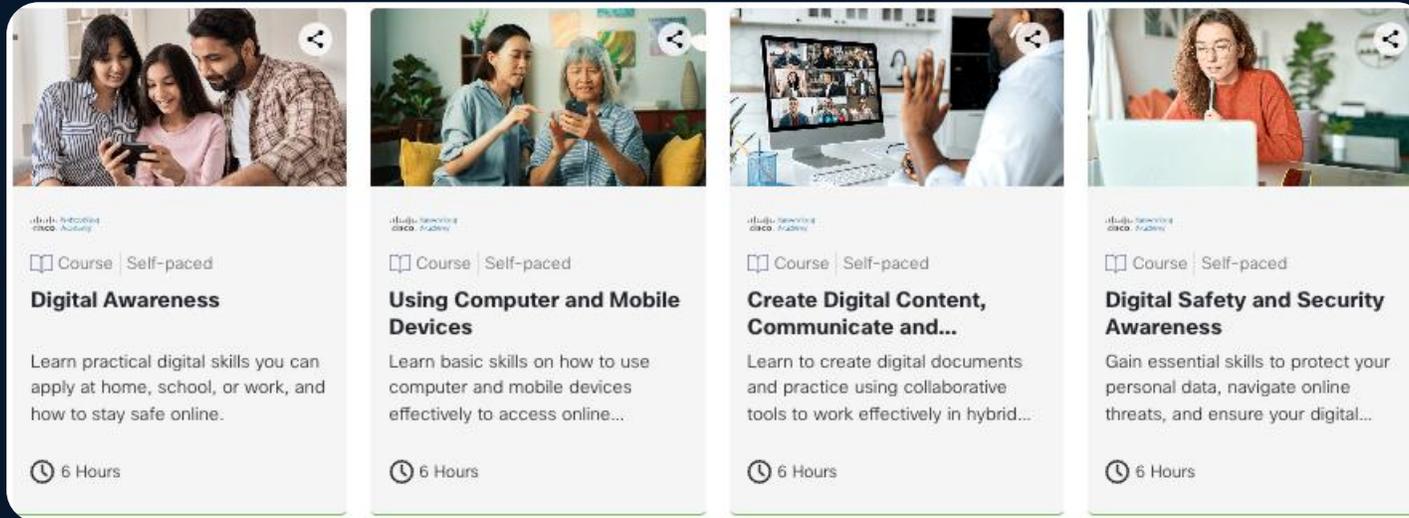*NetAcad Offering*

- **#1 Digital Awareness**
- **#2 Using Computer and Mobile Devices**
- **#3 Create Digital Content, Communicate and Collaborate Online**
- **#4: Digital Safety and Security Awareness**

*Start Here*

# 1

Explain digital technologies as a way to get life tasks done

Navigate online content effectively and responsibly

Manage digital online presence

Explain that digital technologies are evolving rapidly

Describe how to Interact with others in a digital environment

Create your own digital document

Use digital tools for an effective Hybrid working

Describe how to protect Health and Well-Being while using digital technologies

Apply Best Practices to secure devices and protect digital content

**Intro to Cybersecurity**

Apply best practices to maintain online privacy

Explain digital security threats and their impacts

# 3    # 4

EXCHANGE AREA    **Other ILT NetAcad Offering**

# 2

**Intro to Modern AI**

Explain fundamental computing concepts

Describe innovations computing makes possible

**Intro to IoT**

**Computer Hardware Basics**

Explain fundamental software concepts

**Python Essentials**

**Operating Systems Basics**

Explain fundamental operating system concepts

Explain fundamental networking concepts

**Networking Basics**

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# Digital Literacy Learning Collection

Digital literacy is no longer optional – it's essential for everyone. This learning collection offers flexible starting points including short, 6-hour courses designed to equip learners with digital skills necessary for learning, work, and everyday life.



| | | | |
|---|---|---|---|
| 📖 Course \| Self-paced | 📖 Course \| Self-paced | 📖 Course \| Self-paced | 📖 Course \| Self-paced |
| **Digital Awareness** | **Using Computer and Mobile Devices** | **Create Digital Content, Communicate and...** | **Digital Safety and Security Awareness** |
| Learn practical digital skills you can apply at home, school, or work, and how to stay safe online. | Learn basic skills on how to use computer and mobile devices effectively to access online... | Learn to create digital documents and practice using collaborative tools to work effectively in hybrid... | Gain essential skills to protect your personal data, navigate online threats, and ensure your digital... |
| 🕐 6 Hours | 🕐 6 Hours | 🕐 6 Hours | 🕐 6 Hours |
| ES/PT | ES | ES | ES |

By 2030, 9 out of 10 jobs will require digital skills. World Economic Forum –Future of Work Report

**Mobile-friendly**
Access course materials and resources anytime, anywhere.

**Customizable**
Modular courses link to other NetAcad entry-level courses for deeper exploration.

**Interactive Learning Content**
Includes widgets, drag and drop activities, quizzes, and simulations.

**Real Applications**
Focus on real-world scenarios, applying digital literacy skills to everyday life or work

**Certification Alignment**
The OpenEDG Digital Literacy Certification provides option to complete four milestone exams or take sign comprehensive Digital Literacy Exam.

**Framework Alignment**
The European Digital Competence (DigComp) Framework, as endorsed and used by UNESCO and ITU to develop indicators for Global Digital Literacy Skills.

# Professional Skills Portfolio

Entrepreneurship

Core Skills

Sustainability

English for IT

**Discovering Entrepreneurship**
BEGINNER
Course | Self-paced, Instructor-led
Build entrepreneur
oriented approach
world examples a
20 Hours
ES/PT

**Launching a Business Venture**
BEGINNER
Course | Self-paced, Instructor-led
The second
designed to
planning to
20 Hours
ES

**Managing a Business Venture**
BEGINNER
Course | Self-paced, Instructor-led
The third in a 3-part entrepreneurship series designed to help you learn business strategy, operations, networking and risk management.
20 Hours   Free
ES

**Engaging Stakeholders for Success**
BEGINNER
Course | Self-paced, Instructor-led
In this course, learners gain the insights and tools to identify, pri
success.
3 Hours
ES

**Creating Compelling Reports**
BEGINNER
Course | Self-paced, Instructor-led
Learn how to tell a great story and communicate important information to flourish in your professional career.
4 Hours   Free
ES

**Exploring Sustainability**
Module
Sustainability
foundational c
smart grids fr
22 Feb 202

**A Framework for Sustainability in IT**
Module
IT sustainability
organizations.
doing to addres
22 Feb 2024

**Introduction to Greenhouse Gas Accounting for IT**
BEGINNER
Course | Self-paced, Instructor-led
Expand your IT sustainability skills and dig into the environmental impacts of technology.
3 Hours   Free

**English for IT 1**
INTERMEDIATE
OPENEDG
Course | Self-paced, Instructor-led
A course that teaches the English language in a specifi
is a ba
50

**English for IT 2**
INTERMEDIATE
OPENEDG
Course | Self-paced, Instructor-led
A course that teaches the English language in a specific IT context at the "B2" proficiency level which is a basic requirement for employment use.
50 Hours   Free

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MEET LEARNERS WHERE THEY ARE
# English for IT Offerings

COMING

**"English for IT – Basics" Learning Collection**
1) English for IT: Describing and Comparing
2) English for IT: Advice and Time
3) English for IT: Needs and Responsibilities
4) English for IT: People and Quantities

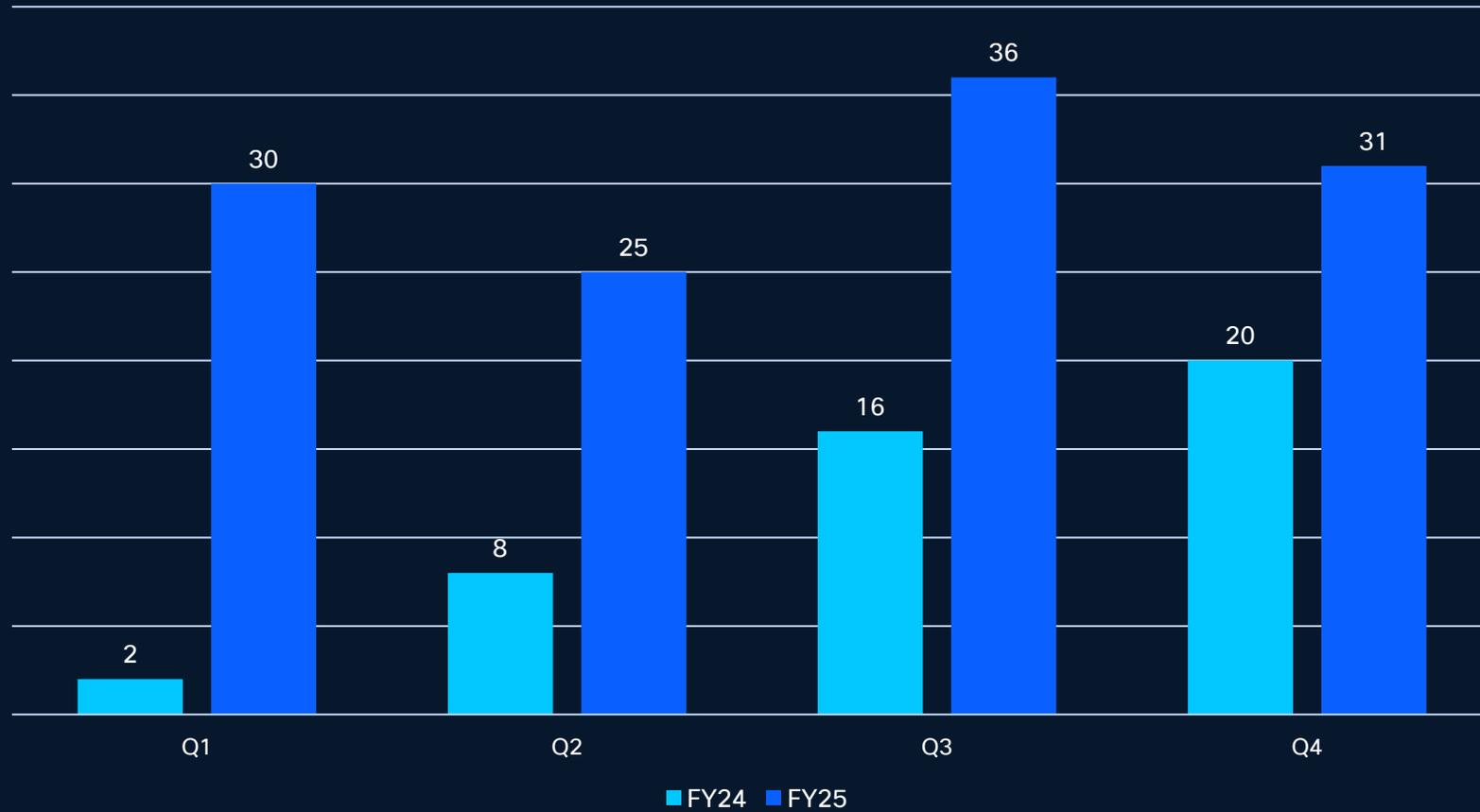INTERMEDIATE

OPENEDG
Course | Self-paced, Instructor-led
**English for IT 1**
A course that teaches the English language in a specific IT context at the "B2" proficiency level which is a basic requirement for employment use.
🕐 50 Hours   🔒 Free

INTERMEDIATE

OPENEDG
Course | Self-paced, Instructor-led
**English for IT 2**
A course that teaches the English language in a specific IT context at the "B2" proficiency level which is a basic requirement for employment use.
🕐 50 Hours   🔒 Free

A1
Common European Framework of Reference

A2
Common European Framework of Reference

B1
Common European Framework of Reference

B2
Common European Framework of Reference

C1
Common European Framework of Reference

C2
Common European Framework of Reference

Beginner          Intermediate          Advanced

The Common European Framework of Reference for Languages (CEFR) organizes language proficiency in six levels, A1 to C2, which can be regrouped into three broad levels.

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# NetAcad Course Translations are a Priority!



Translations

| | Q1 | Q2 | Q3 | Q4 |
|---|---|---|---|---|
| FY24 | 2 | 8 | 16 | 20 |
| FY25 | 30 | 25 | 36 | 31 |

■ FY24  ■ FY25

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MEET LEARNERS WHERE THEY ARE
# FY26 – Global Translations Roadmap

## FY26 – Q1

- Computer Hardware Basics / Arabic
- Intro to Modern AI / Spanish
- Intro to Modern AI / French
- Intro to Modern AI / German
- Intro to Modern AI / Polish
- Intro to Modern AI / Italian
- Intro to Modern AI / Portuguese
- Intro to Modern AI / Romanian
- Intro to Modern AI / Greek
- Digital Awareness / Polish
- Digital Awareness / German
- Using Computer and Mobile Devices / Welsh
- Intro to Data Science / German
- Intro to Data Science / Polish
- Cybersecurity Essentials / Simplified Chinese
- Endpoint Security / Thai
- Ethical Hacker / French
- Ethical Hacker / Portuguese
- Cyber Threat Management / Korean
- Cybersecurity Essentials / Polish
- Digital Awareness / German
- Python Essentials 2 / Hungarian
- Data Analytics Essentials / Spanish
- Network Support and Security / Ukrainian
- Networking Basics / Dutch
- Getting Ready to Teach CSE / Portuguese
- Getting Ready to Teach NE / Portuguese
- Getting Ready to Teach CSE / Spanish
- Getting Ready to Teach NE / Spanish

## FY26 – Q2

- CCNA ENSA Supplemental Module / Simplified Chinese
- CCNA SRWE Supplemental Module / Simplified Chinese
- Cybersecurity Essentials / Vietnamese
- Digital Awareness / Portuguese (Portugal)
- Digital Safety and Security Awareness / Portuguese (Portugal)
- Digital Safety and Security Awareness / Dutch
- Discovering Entrepreneurship / Italian
- Ethical Hacker / Korean
- Exploring Internet of Things with Cisco Packet Tracer / Simplified Chinese
- Exploring Networking with Cisco Packet Tracer / Simplified Chinese
- IIoT and Control Systems in Energy / German
- IIoT and Control Systems in Manufacturing / French
- Industrial Networking Essentials / French
- Industrial Networking Essentials / German
- Industrial Networking Essentials / Italian
- Industrial Networking Essentials / Greek
- Intro to Modern AI / Dutch
- Intro to Modern AI / Hungarian
- Introduction to Cybersecurity / Vietnamese
- IT Support Essentials / Spanish
- IT Support Essentials / Portuguese
- IT Support Essentials / Arabic
- Networking Basics / Japanese
- Networking Devices and Initial Configurations / Japanese
- Networking Essentials / Japanese

## FY26-Q3*

- CSS Essentials / Arabic
- Digital Awareness / Arabic
- Using Computer and Mobile Devices / Arabic
- Create Digital Content, Communicate and Collaborate Online / Arabic
- Digital Safety and Security Awareness / Arabic
- HTML Essentials / Arabic
- JavaScript Essentials 1 / Arabic
- JavaScript Essentials 2 / Arabic
- Operating Systems Basics / Arabic
- Python Essentials 2 / Arabic
- Intro to Modern AI / Czech
- Intro to Modern AI / Dutch
- Intro to Modern AI / Hungarian
- AI Essentials 2 / French
- AI Essentials 2 / German
- AI Essentials 2 / Greek
- AI Essentials 2 / Italian
- AI Essentials 2 / Polish
- AI Essentials 2 / Portuguese
- AI Essentials 2 / Romanian
- Digital Awareness / Romanian
- Digital Safety and Security Awareness / Romanian
- Endpoint Security / Vietnamese
- Cyber Threat Management / Vietnamese
- Network Defense / Vietnamese
- IT Support Essentials / French
- IT Support Essentials / Simplified Chinese
- Engaging Stakeholders for Success / Spanish
- Intro to Data Science / Simplified Chinese
- Launching a Business Venture / Spanish
- Network Addressing and Basic Troubleshooting / Japanese
- Network Security / Simplified Chinese
- Network Support & Security / Japanese

## FY26-Q4*

- Digital Safety and Security Awareness / Czech
- Digital Safety and Security Awareness / Hungarian
- AI Essentials 2 / Spanish
- IIoT and Control Systems in Energy / French
- IIoT and Control Systems in Energy / Polish
- IIoT and Control Systems in Energy / Italian
- IIoT and Control Systems in Manufacturing / Spanish
- IIoT and Control Systems in Manufacturing / German
- IIoT and Control Systems in Manufacturing / Polish
- IIoT and Control Systems in Manufacturing / Italian
- Intro to Modern AI / Simplified Chinese
- Computer Hardware Basics / Simplified Chinese
- Creating Compelling Reports / Spanish
- Cyber Threat Management / Simplified Chinese
- Data Analytics Essentials / Simplified Chinese
- Endpoint Security / Simplified Chinese
- Managing a Business Venture / Spanish
- Network Addressing and Basic Troubleshooting / Simplified Chinese
- Network Defense / Simplified Chinese
- Network Support & Security / Simplified Chinese
- Networking Basics / Simplified Chinese
- Networking Devices and Initial Configurations / Simplified Chinese
- Operating System Basics / Simplified Chinese

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# Priority #2:
# Create Learning Paths That Lead to Compelling Careers

# NetAcad Targeted Job Roles

## Network & IT Support

- IT Support Specialist
- Network Support Technician
- Network Administrator
- Network & IT Automation Engineer

## Cybersecurity

- SOC Analyst Level 1
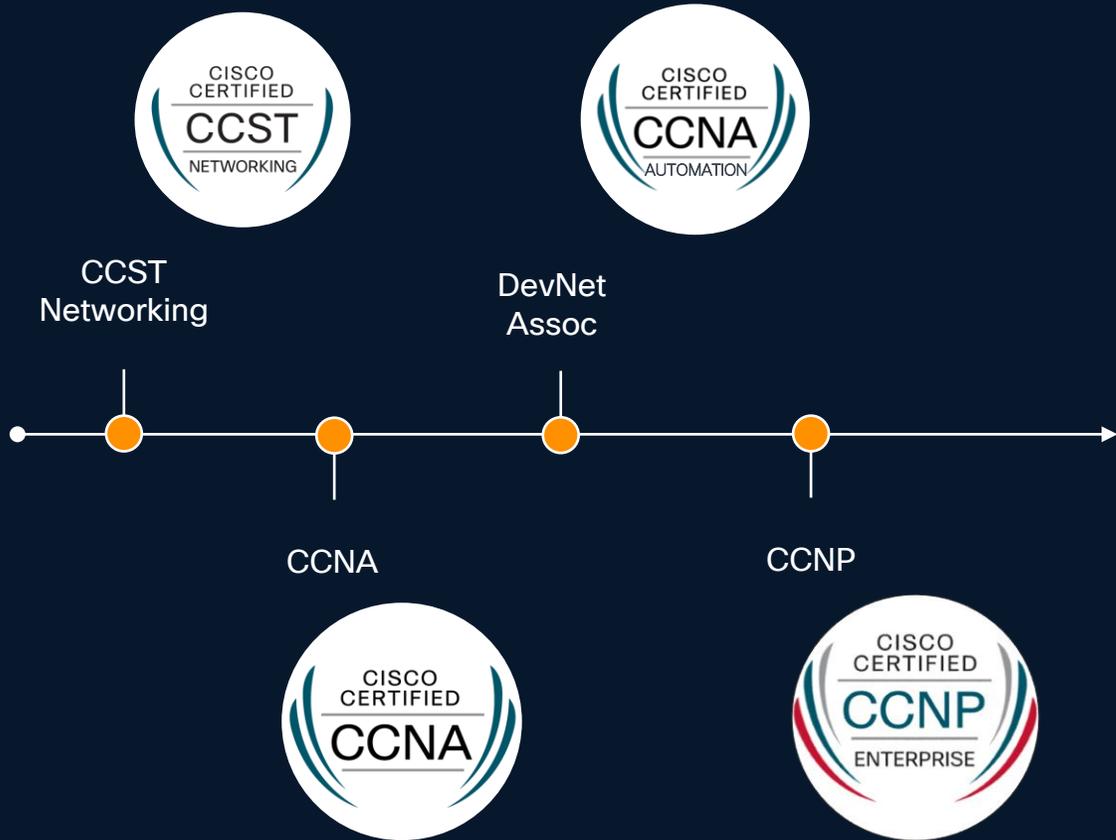- Cybersecurity Analyst
- Ethical Hacker

## Data & AI

- Data Analyst
- Python Developer
- Jr. AI Engineer

## Industrial

- OT Cybersecurity Technician

Educating Tomorrow's ICT Workforce
The role of generative AI skills in entry-level ICT roles

In collaboration with Lightcast

# Networking

## New and Coming!

- CCNA Supplemental Module Integration
- AI for CCNA Workshop
- CCNA Updates with Learn with Cisco

- Cloud Managed Networking 101 with Meraki now available; 201 coming!

- CCNP Updates with Learn with Cisco

CCST
Networking

DevNet
Assoc

CCNA
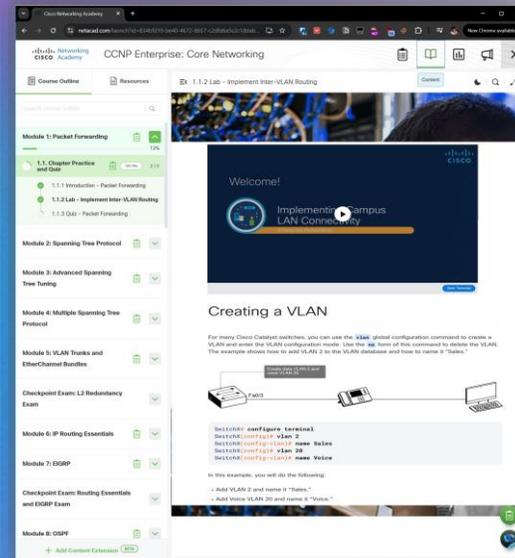
CCNP

A new updated CCNP Curriculum with a complete NetAcad experience (online curriculum, labs, assessments, PPTs, etc.)

# Cybersecurity

## New and Coming!

CCST Cybersecurity

CyberOps Associate

Ethical Hacker

Network Security
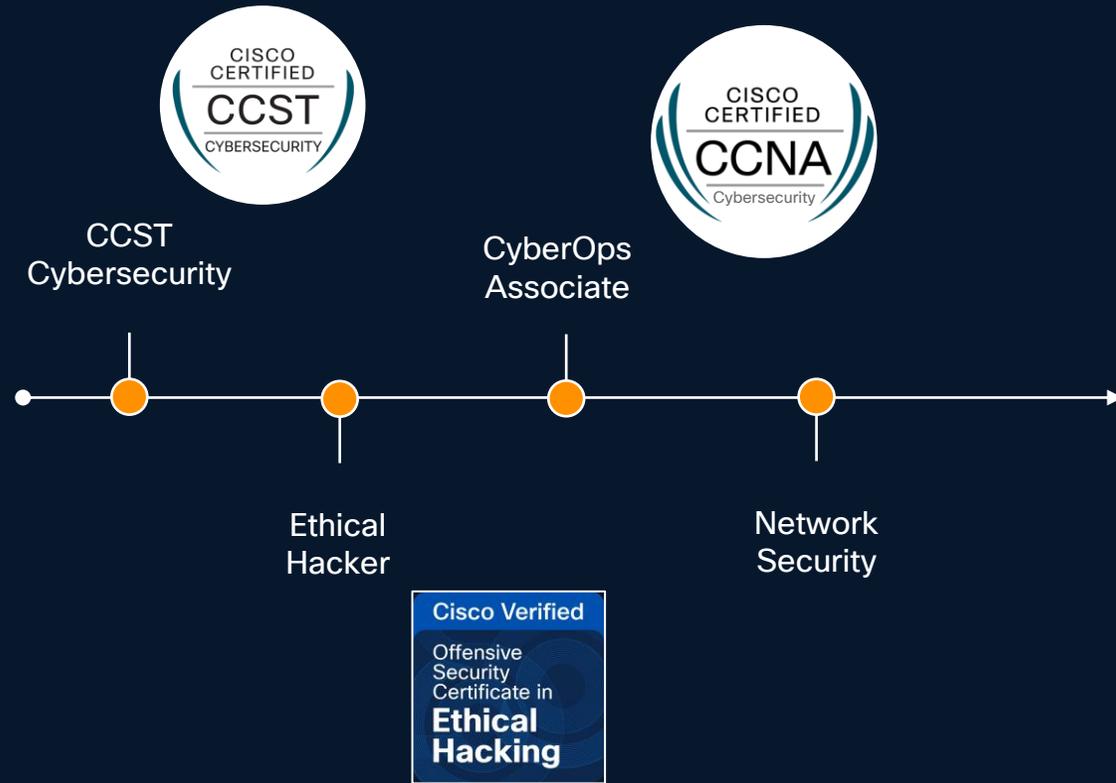
- Splunk Cyber Defense Analyst Collection

- A NEW Capture the Flag challenge every 90 days!
- Current Challenge: Decoding the Server Heist

- Threat Intelligence 101 with Talos

Module

**Threat Intelligence 101 with Cisco Talos**

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# IT Support

**New and Coming!**

- All Courses Now Available!
- Coming:
  - Prioritized Translations
  - Addition of supplemental hands-on labs to IL mini-courses
  - Getting Ready to Teach IT Support course

- IT Essentials
- Computer Hardware Basics
- Operating Systems Basics

## CCST IT Support

Equip learners with the knowledge and credentials most valued in today's job market.



| | IT Support Specialist Career Path | | | |
|---|---|---|---|---|
| Instructor Led Only | IT Support Essentials | | | |
| Instructor Led & Self-paced | IT Customer Support Basics | Operating Systems Support | Security and Connectivity Support | Hardware and Upgrade Support |

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**CCST**
IT SUPPORT

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# Artificial Intelligence

# Demand for AI Skills

## Technical Skills Gap

| Skill Name | Gap Severity |
| --- | --- |
| Large Language Models (LLMs) | Critical |
| LLM Architecture | Critical |
| Prompt Engineering | Critical |
| Conversational AI | Critical |
| Transformer Architecture | Critical |
| Generative AI and Tools | Critical |
| RAG Systems | Critical |
| AI Product Management | Critical |
| Data Mesh Architecture | Critical |
| AI Governance | Critical |
| AI Ethics | Critical |
| AI Security | Critical |
| Secure Access Service Edge (SASE) | Critical |
| Vector Databases | Critical |
| MLOps/LLMOps | High |

| Skill Name | Gap Severity |
| --- | --- |
| Platform Engineering | High |
| Service Mesh | High |
| Edge Computing | High |
| Zero Trust Architecture | High |
| Container Security | High |
| GitOps | High |
| Customer Health Scoring | High |
| Multi-Cloud Management | Medium |
| DevSecOps | Medium |

**Gap Severity Level:** The Gap Severity uses a four-tier system based on the supply-demand imbalance.

- **Critical:** <30% of demand met
- **High:** 30-50% of demand met
- **Medium:** 50-70% of demand met
- **Low:** >70% of demand met

## Prevalence of AI Skills per Senority Level

| AI Skills Area | Entry Level (0-3 years) | Mid Level (3-7 years) | Senior Level (+7 years) |
| --- | --- | --- | --- |
| AI Tools Usage | 85% | 90% | 75% |
| ML Model Development | 45% | 70% | 60% |
| MLOps/LLMOps | 35% | 75% | 70% |
| AI Project Management | 25% | 65% | 88% |
| Ethics & Governance | 30% | 60% | 85% |
| AI Strategy | 20% | 55% | 90% |

Senority Level

Skills Prevalecence (%)
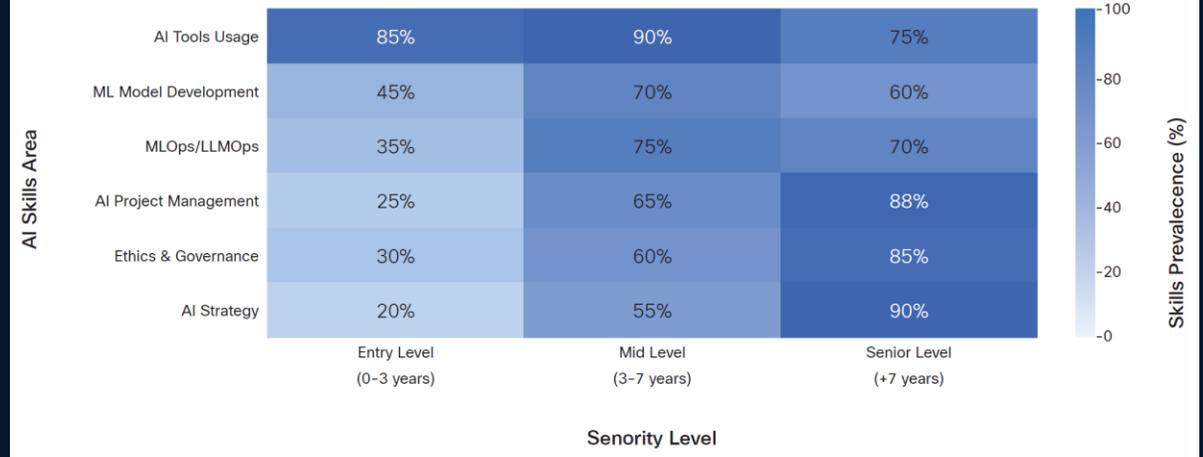
### ICT in Motion: The Next Wave of AI Integration (2025)

accenture · CISCO · cornerstone · eightfold.ai · Google · IBM · indeed · intel · Microsoft · SAP

https://www.cisco.com/content/dam/cisco-cdc/site/m/ai-workforce-consortium/documents/2025-ai-workforce-consortium-full-report.pdf

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# AI Essentials Portfolio

## Intro to Modern AI

*Beginner-friendly overview and hands-on practice*

- Explore key AI concepts in a practical, hands-on way
- Experiment with computer vision and machine translation tools
- Learn chatbot fundamentals with prompt-writing tips
- Practice with 10+ popular AI apps

Now Available

## Apply AI

*Practical, no-code skills for everyday tasks*

- Integrate AI into everyday tasks without coding
- Design and refine prompts systematically
- Evaluate AI outputs with AI + human review
- Apply AI responsibly with privacy, accuracy, and usability in mind
- Five course series combined into semester-long

| Prompt like an engineer |
| Update your resume |
| Extract and Transform Text |
| Write with AI |
| Analyze Customer Reviews |

Q1/Q2 FY26

## Code with AI*

*AI-assisted coding, data analysis, and automation*

- Secure coding with AI in private environments
- AI-assisted data analysis with Python
- Automate workflows across common apps
- Apply advanced tools with RAG and SQL
- Multi-course series combined into semester-long

| Prompt Your Code |
| SQL |
| Data Analysis with AI |
| Connect to Apps |
| Retrieval Augmented Generation |

Q3/Q4 FY26

## Build with AI*

*Training, deploying, and creating AI apps*

- Explore open-source models and their applications
- Train and fine-tune models for specific needs
- Build and guide AI agents to perform tasks
- Deploy models and apps for real-world use
- Multi-course series combined into semester-long

| Open-source models |
| Train AI models |
| AI Agents |
| Deploy AI models |
| AI Apps |

FY27

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# Key AI Curriculum Features

## ENGAGING

Step-by-step "recipe" to perform a task in the real world: Video lectures walk through every step required to carry out the use case, including setup and installation, data formatting, human and AI-assisted evaluation, and transferring data between LLMs and other apps.

## FREE

Demonstrates how to work within the limitations of free versions of public chatbots, free versions of productivity software, and local LMs: such as daily use limits, limits to chat conversation length, limits to performance of small models.

## SECURE

Privacy with a local LM: use cases requiring privacy are implemented with small models that can run on typical computer hardware.

## HANDS-ON

Simulated decision-making scenarios: students are given 2 or 3 choices at various steps in a task, asked to practice weighing the pros and cons with some quiz questions before continuing with the recommended approach.

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# Introduction to Modern AI

Basics of AI through free AI-enabled apps. Topics include the basics of computer vision, machine translation, and chatbots. Students learn how chatbots work, gain tips for writing better prompts, and explore ways to apply chatbots for personal use and productivity.



Available in

- Spanish
- French
- German
- Polish
- Italian
- Portuguese
- Romanian
- Greek

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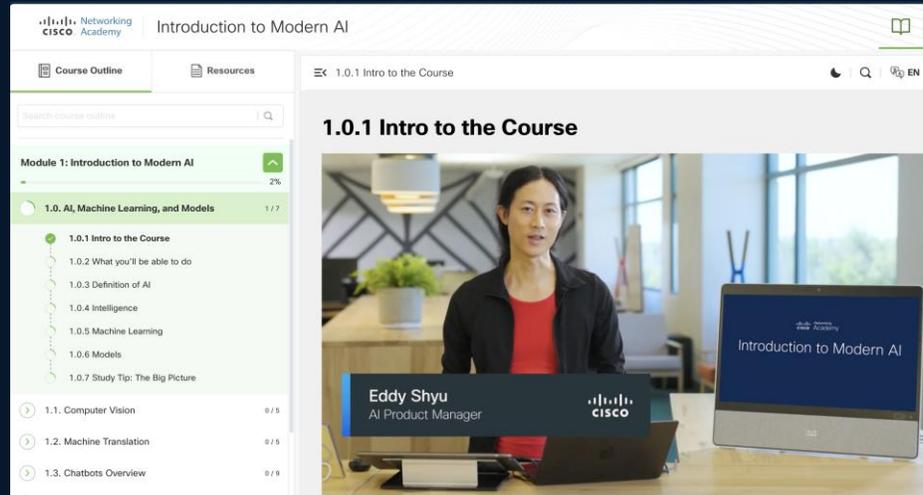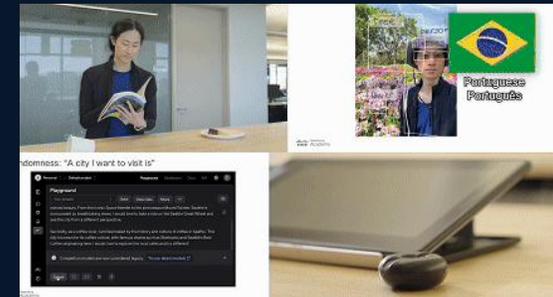
# Apply AI Series

Teaches practical, no-code skills to integrate AI into everyday work tasks, design effective prompts, evaluate outputs, and apply AI responsibly. Five course series, combined into semester-long course.

| Course | Description |
|---|---|
| Prompt like an Engineer | Overview: Using LLMs systematically, borrowing practices from software development and engineering. Key Skills: Identify where to incorporate AI in a process, Systematically design and refine prompts, evaluate AI outputs using both AI and human review. |
| Update your Resume *Coming Soon!* | Overview: Enhance and customize your resume for different job applications using LLMs Key Skills: private, local LLMs for privacy.  Extract resume content from notes. Match and revise resume content to job requirements.  Undo and redo prompts. |
| Extract and Transform Text | Overview: Extract info from news into forms; extract action items from chat histories; write weekly progress reports. Key Skills: Extract relevant information and transform it to a human-digestible format. Use system prompts specific to each task. |
| Write with AI | Overview: Write with STT, rewrite with LLMs Key Skills: STT and voice commands; formatting STT-generated text with a local LLM for privacy. Chatbot-assisted revision of marketing copy to fit company messaging guidelines. |
| Analyze Customer Reviews *Available now!* | Overview: Identify and quantify themes from text data using an LLM Key Skills: Choose the right tool at each step. Structure info for easier human evaluation. |

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# Code with AI Series-Early Look*

Builds practical coding skills with AI – from writing and refining code, to analyzing data, automating workflows, and working with advanced tools like RAG and SQL. Multi-course series, combined into semester-long course.

| Course | Description |
|---|---|
| Prompt your Code | Overview: LLM assisted coding<br>Key Skills: code environment setup with a private LM for code completion.  LLM-written code from chat conversations and direct code completion into the code environment |
| Data Analysis | Overview: Exploratory Data Analysis using Python, written by prompting a local LLM<br>Key Skills: prompt a local, private LLM for code completion and revision.  Anonymize code and data before prompting a public chatbot. |
| Connect to Apps | Overview: Connect to your email, word processor and spreadsheet applications to automate repetitive manual tasks.<br>Key Skills: Prompt LLM for code generation in Python, Javascript, VBA. |
| Retrieval Augmented Generation | Overview: Set up private RAG system with a local LLM.<br>Key Skills: Install a ready-to-use RAG system.  Prompt an LLM to build a basic RAG system in Python. |
| SQL | Overview: prompt to access data from a SQL database<br>Key Skills: get metadata of the SQL tables as context, querying, filtering, aggregation |

*Actual course names and topics may change and will be updated before launch*

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# Build with AI Series-Early Look*

Teaches how to build with AI – from working with open-source models to training, deploying, and creating AI-powered apps and agents. Multi-course series combined into semester-long course.

| Course | Description |
|---|---|
| Open-Source Models | Use pretrained, free models from Hugging Face transformers library for computer vision and audio processing |
| Train AI Models | Train machine learning models from scratch using supervised learning with Python libraries such as scikit-learn |
| AI Agents | Basic agentic workflows (prompt chaining, orchestrator-worker) |
| Deploy AI Models | Host and serve models in the cloud. |
| AI Apps | Integrate AI models into user-facing web applications |

*Actual course names and topics may change and will be updated before launch*

# Learning Pathways



No Coding Required

Coding Required

**Programming Pathway** — Python Developer

JavaScript Essentials

Python Essentials

**DATA Pathway** — Business Analyst / Data Scientist

Intro to Data Science

Data Analytics Essentials

Data Science Essentials with Python

**AI Pathway** — Jr. AI Engineer

Intro to Modern AI

Apply AI

Code with AI

Build with AI

AI Essentials
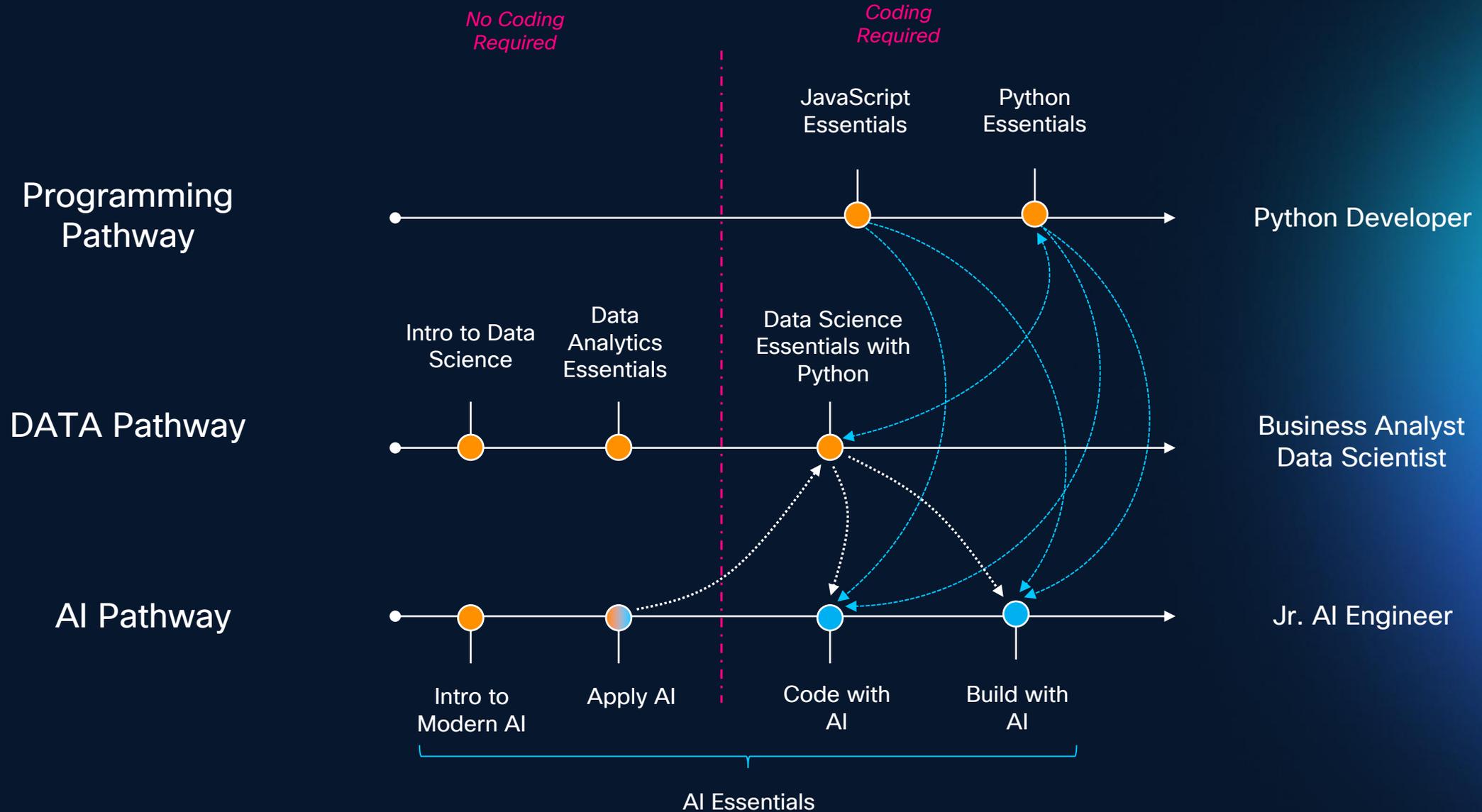
# Character, Ethics and Governance in the Age of AI

*Need to equip learners to lead with integrity by applying ethical principles to AI decisions and understanding governance frameworks. This course develops the character, insight, and career awareness needed to navigate responsible AI leadership in the rapidly evolving technology landscape.*

## Values First

- Integrity, Accountability, Empathy, Fairness, Truthfulness, and Courage – universal values that guide decision-making in ICT workplaces.
- Learn why being moral matters, personally and professionally.

## AI Ethics

- Explore the five AI ethics pillars: Fairness, Robustness, Explainability, Transparency, and Privacy.
- Connect your personal traits to these principles in real-world ICT scenarios.

## Real World Scenarios

- Make decisions in branching simulations and case studies that mirror challenges faced by AI and ICT professionals today.
- See the real consequences of choices through multiple perspectives.

## Career Pathways

- Get introduced to emerging roles like AI Risk & Governance Specialist and related careers.
- Understand the skills and knowledge needed to grow into these positions.

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# New! Cisco U - AI Training and Certification Programs

Cisco AI Business Practitioner (AIBIZ) – Available November 3, 2025

Cisco AI Technical Practitioner (AITECH) – Available December 2025

# Industrial Networking

# Industrial Networking



### Industry obstacles to growth: external

| | | |
|---|---|---|
| Shortage of skilled workers | | 42% |
| Inflation | | 40% |
| Cybersecurity risks | | 37% |
| Supply chain disruption | | 33% |
| The rise of AI | | 31% |
| Competitors' technology adoption | | 31% |
| Material shortages | | 27% |
| Macro-economic climate | | 25% |
| Climate change | | 22% |
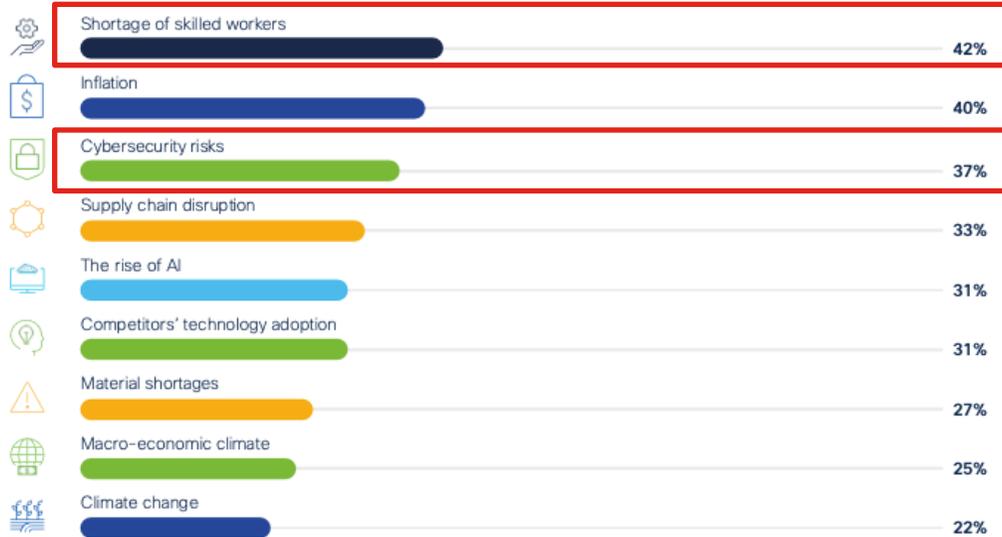


## 2024 State of Industrial Networking Report

A global view of the evolution of operational technology and its impact on security, IT, and future innovation.

## New NICE Work Role – OT Cybersecurity Engineer

March 10, 2025

NIST | NICE

### NICE Framework Components v2.0.0

The **NICE Workforce Framework for Cybersecurity (NICE Framework)** establishes a standard approach and common language for describing cybersecurity work and learner capabilities. The NICE Framework seeks to improve communication among stakeholders throughout the cybersecurity ecosystem about how to identify, recruit, develop, and retain talent. NICE Framework Components include Work Role Categories, Work Roles, Competency Areas, and Task, Knowledge, and Skill (TKS) statements as well as the relationships between those elements.

WORKFORCE FRAMEWORK FOR CYBERSECURITY

Credit: NICE

# Collaboration to Address a Real Need: Skills Shortage
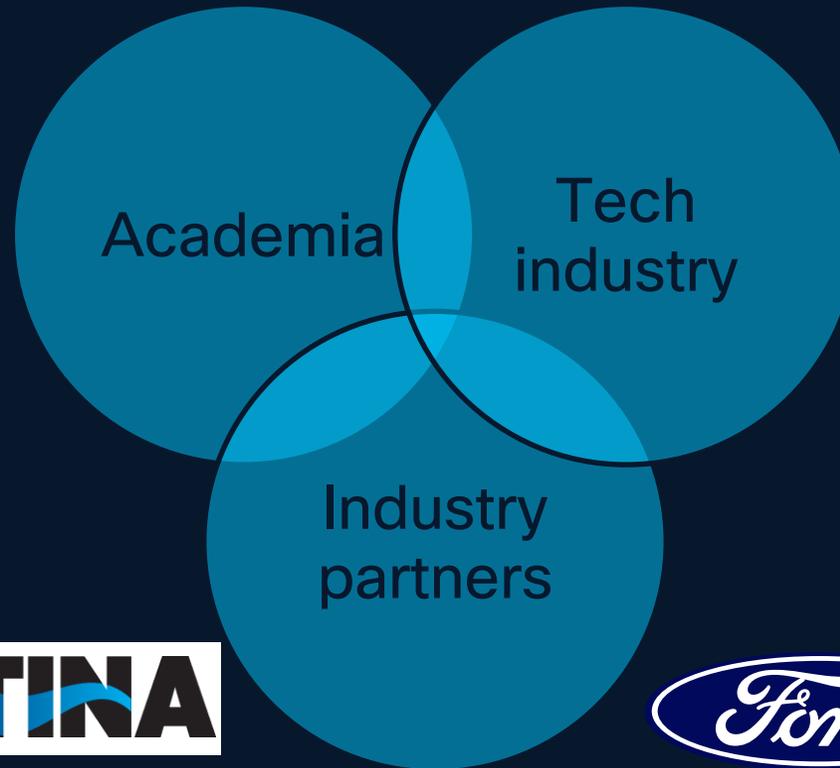
# Securely Connect Operational Technology

Essential Industrial networking and cybersecurity skills for entry-level OT Jobs in two verticals: manufacturing and utility (power).

## Target Audience:

- Students in secondary and post-secondary educational Institutions in the two verticals: manufacturing, utility (Energy power)

- Adults that wants to reskill/upskill

## Value proposition

- Complement the learner vertical-specific skills with Industrial Networking and Cybersecurity skills critical for operating modern converged OT infrastructures

## Format:

- Learning Collection of courses available on NetAcad.com via Cisco Academy

Energy Track

Manufacturing Track

Course#1: Industrial Networking Essentials

Course#2a: Industrial IoT and Control Systems in Energy

Course#2b: Industrial IoT and Control Systems in Manufacturing

Course#3: Industrial Cybersecurity Essentials
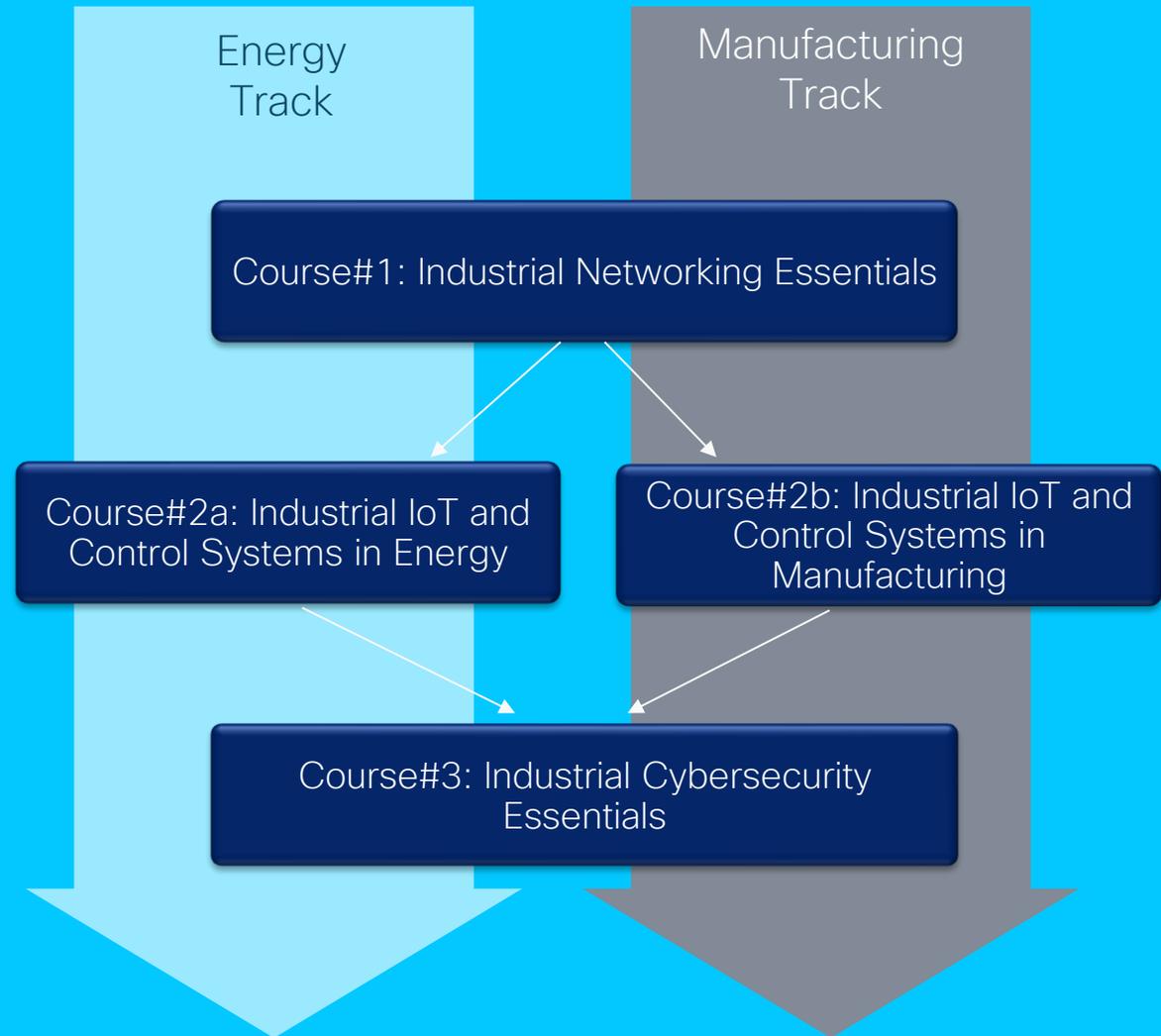
# Securely Connect OT: Courses and Modules

Estimated total duration ~ 75 hours

## Industrial Networking Essentials (~35h)

1. Networking Concepts for OT
2. Network Components, Types, and Connections
3. Network Media
4. Wireless Networks in Integrated IT and OT Systems
5. Communication Principles
6. Network Design
7. The Access Layer
8. Configuring Network Devices
9. The Internet Protocol
10. IPv4 Addressing
11. Gateways to Other Networks
12. Routing Between Networks
13. Transport Layer
14. Application Layer Services
15. Application Layer Implementation in IACS and the Internet of Things
16. Build a Small IACS Network

## Industrial IoT and Control Systems in Manufacturing (~15h) *

1. Industrial Automation and Control Systems
2. Safety and Regulatory Compliance
3. High Availability Networking for OT
4. Time Sensitive Networking for OT
5. Manufacturing IACS
6. Implement a Simulated Manufacturing IACS System

## Industrial IoT and Control Systems in Energy (~15h) *

1. Industrial Automation and Control Systems
2. Safety and Regulatory Compliance
3. High Availability Networking for OT
4. Time Sensitive Networking for OT
5. Smart Grid Systems
6. Implement a Simulated Smart Grid

## Industrial Cybersecurity Essentials (~25h) *

1. Introduction to Industrial Cybersecurity
2. Attack Concepts and Techniques
3. Industrial Cybersecurity Frameworks and Regulations
4. Risk Assessment
5. Vulnerabilities
6. Secure Industrial Networks
7. Authentication and Authorization Controls
8. Hardening the Industrial Infrastructure
9. Frontiers in Industrial Security

* Currently available as BETA

CISCO

Cisco Confidential

# Cisco Packet Tracer 9.0.0

Cisco Packet Tracer, a leading tool for practicing ICT skills, becomes even more unique in its latest version by empowering users to practice entry-level industrial skills. It enables practice of industrial processes, device connectivity and configuration, troubleshooting, and securing, with support for industrial-specific protocols - using just a simple PC.
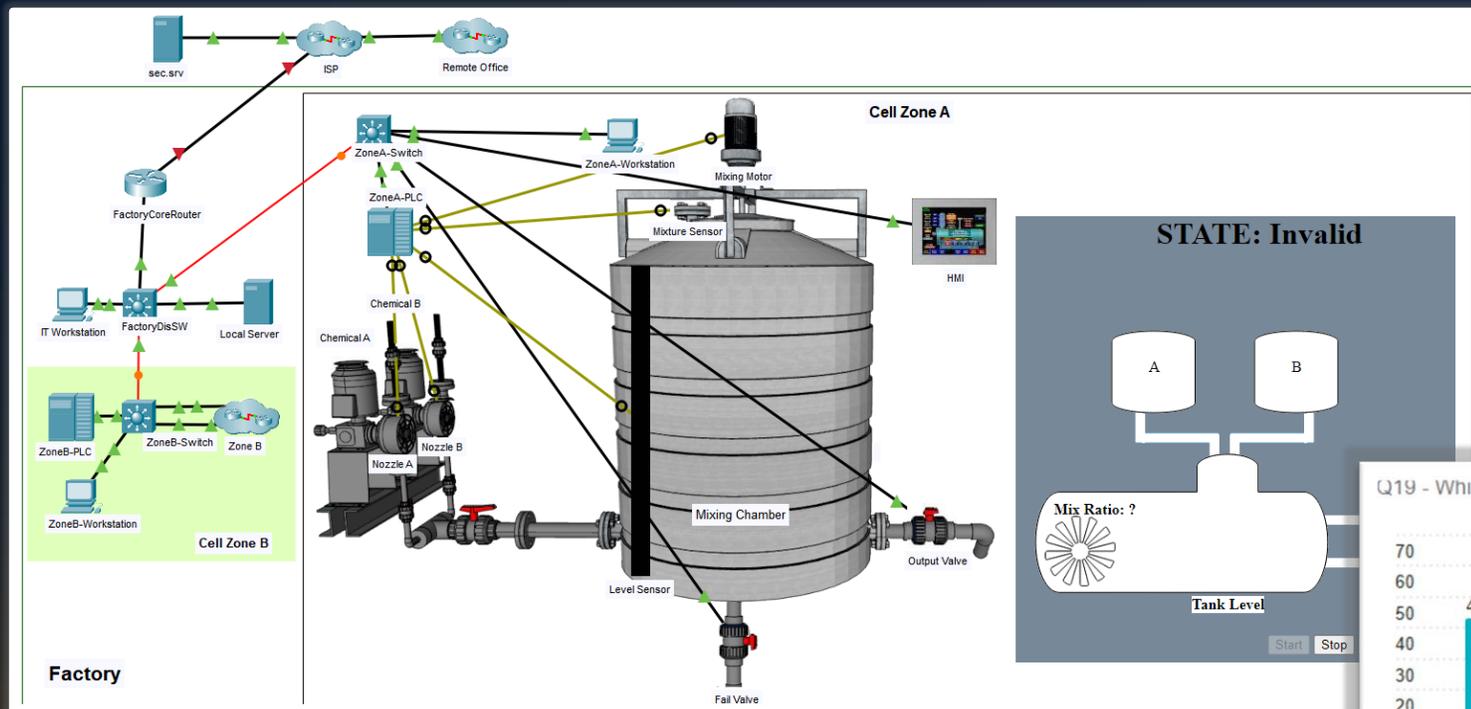
Industrial Switch

Industrial Router

Simulate a factory for mixing raw materials

Q19 - Which of the following self-study materials did you use? - Selected Choice

| Free Cisco Study Materials ... | Free Cisco Networking Academy ... | Cisco Press Book | Free CCNA Training resources ... | Cisco's Packet Tracer | Cisco Practice Exams | Boson Practice Exams | Others, please specify |
|---|---|---|---|---|---|---|---|
| 43 | 37 | 41 | 49 | 68 | 37 | 22 | 15 |

■ Choice Count

*Data from CCNA survey to 400 CCNA holders via Marketo*

# Cisco Packet Tracer 9.0.0

Expand on the Industrial devices, protocols and process

Industrial Switch



Cisco Packet Tracer, a leading tool for practicing ICT skills, becomes even more unique in its latest version by empowering users to practice entry-level industrial skills. It enables practice of industrial processes, device connectivity and configuration, troubleshooting, and securing, with support for industrial-specific protocols - using just a simple PC.

## Securely
- Industrial Firewall (ISA3000-ASA)
- Cyber Observer (inspired by Cisco Cyber Vision)

Industrial Router

## Connect

**Industrial Router**
- IR8340
- IR1101

**Industrial Switch**
- IE9300
- IE3400

- Fiber Optics
- DIN Rail

- Modbus
- Profinet
- CIP: Ethernet/IP
- PTP (Power Profile)
- PRP
- IEC61850
  - Goose
  - SV
  - MMS
- OPC-UA
- 5G

## Operational Technologies

- Sensors
- Actuators
- Create your own sensor, actuator…

- PLC
- RTU
- HMI

- Data Historian
- Engineering Workstation
- Ladder Logic

# Industrial IoT in Energy:
## Simulate a Smart Grid

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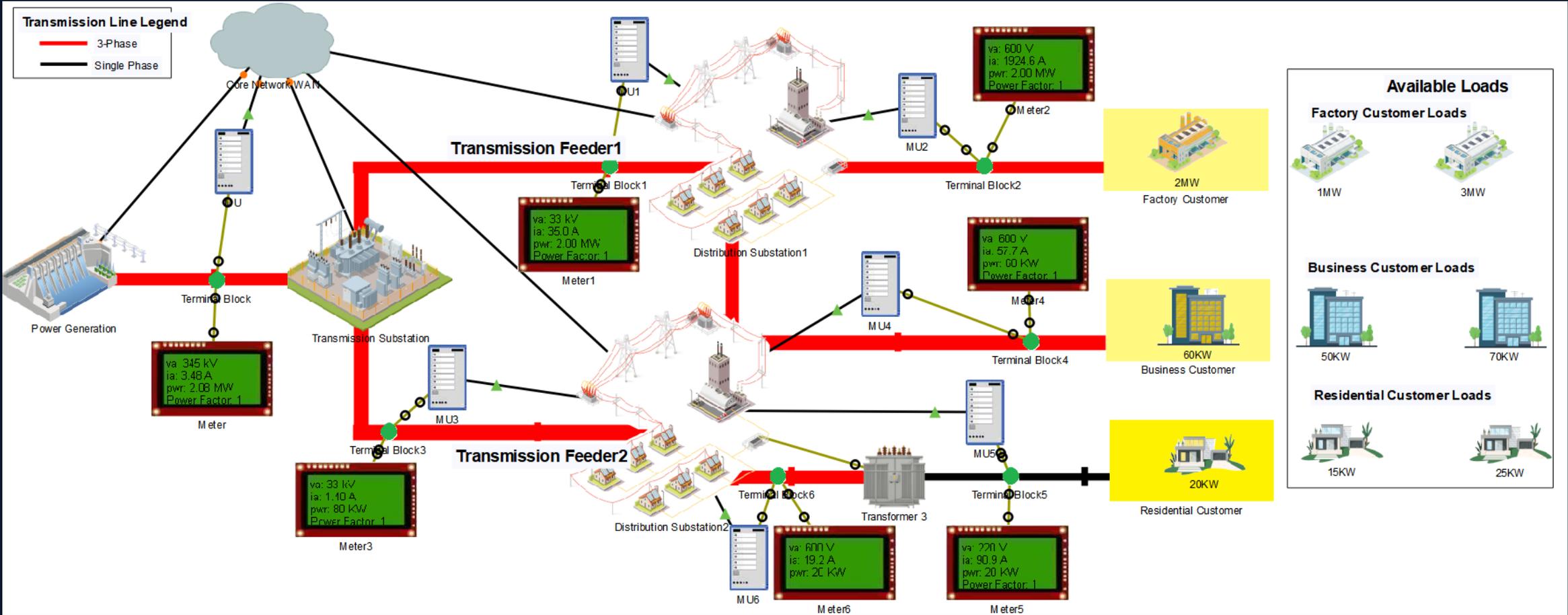
# Industrial IoT in Manufacturing:
## Simulate a factory for mixing raw materials
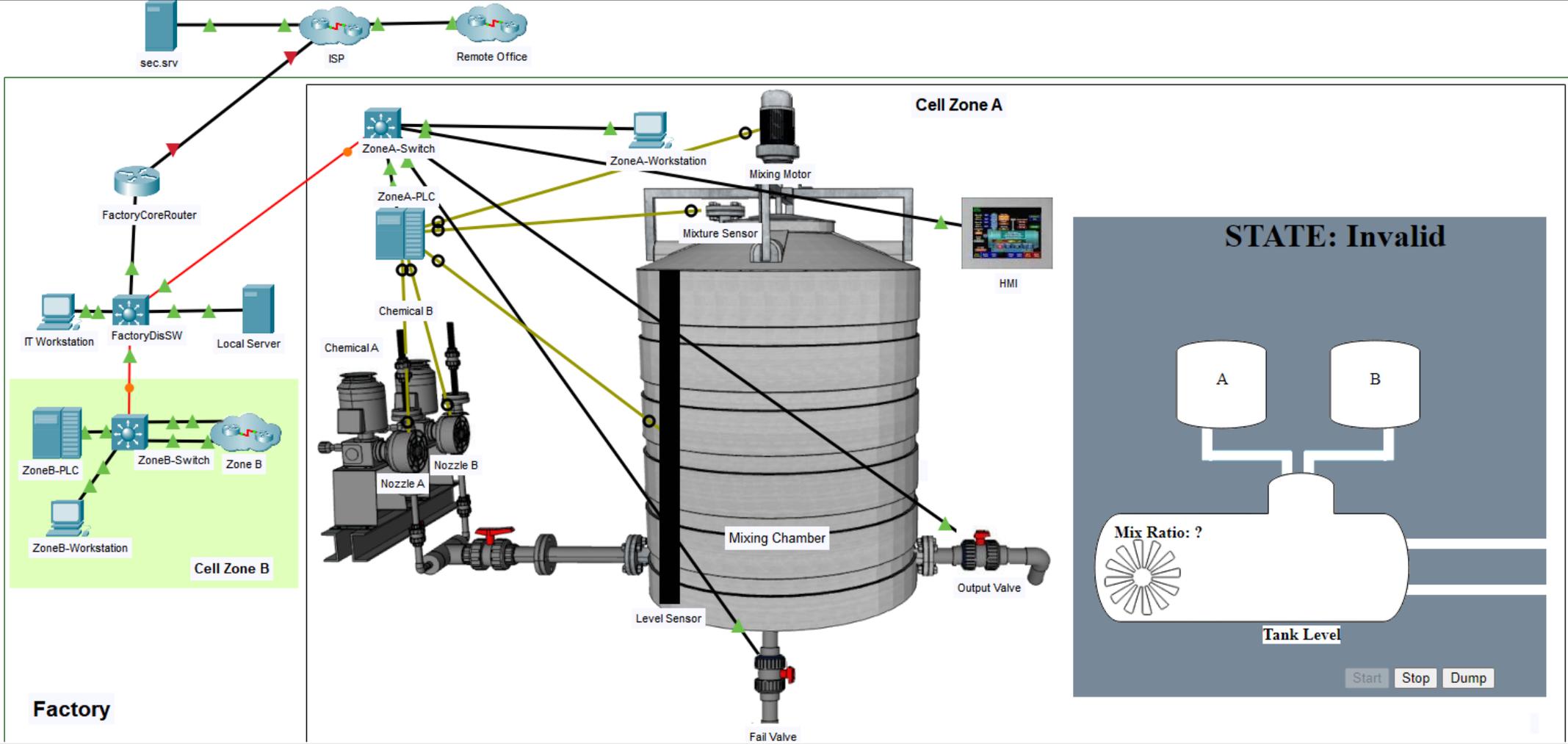
# Cisco Packet Tracer 9.0.0

## Practice Programming PLCs in an IACS Network

Practice ladder logic programming to control manufacturing processes.
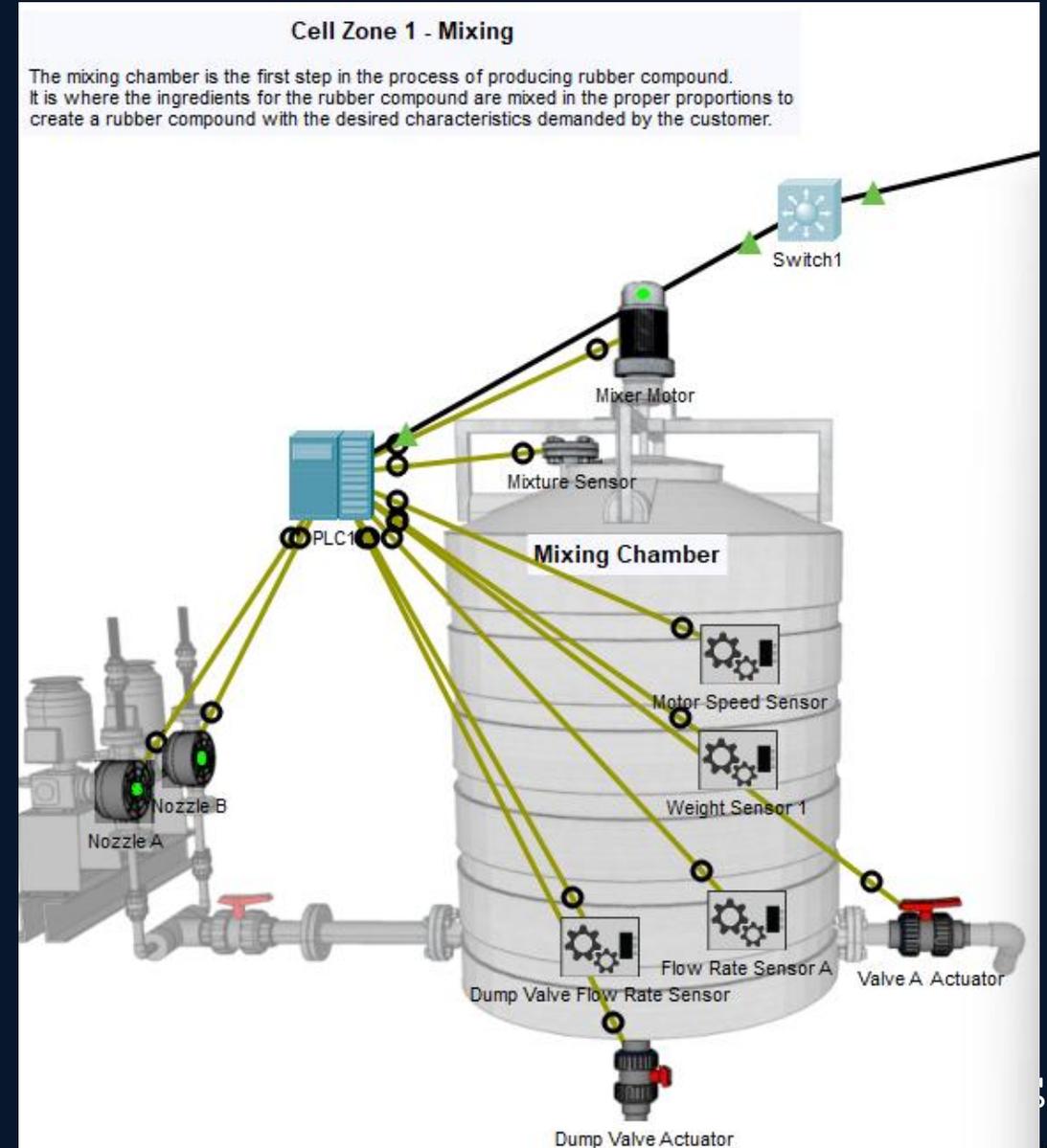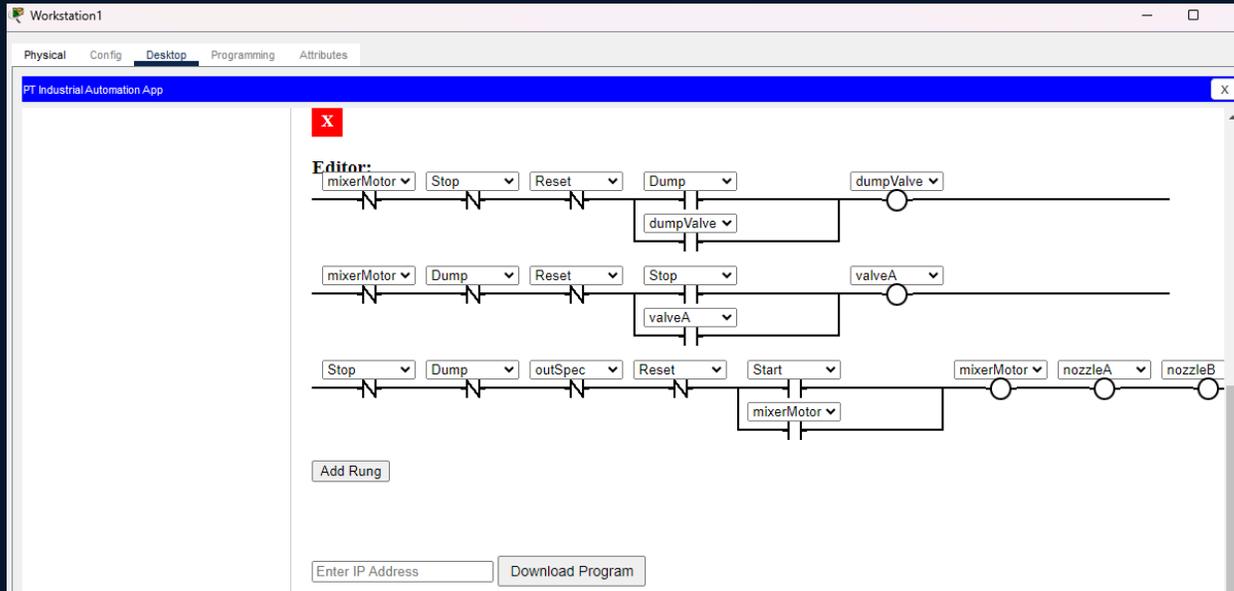
# Cisco U. Free Learning Resources

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# Thank you

jleiton@cisco.com