

# CISCO IT ESSENTIALS 8

## Cisco Networking Academy-Aligned Course Syllabus

### School Year 2026-2027

*"The only roadblock to your success rests between your ears."*

|                           |                                                                        |
|---------------------------|------------------------------------------------------------------------|
| <b>Program</b>            | Mission Valley Regional Occupational Program (MVROP)                   |
| <b>Instructor</b>         | Hector Albizo                                                          |
| <b>Grade Level</b>        | Grades 11-12                                                           |
| <b>Course Length</b>      | Full academic year; block schedule                                     |
| <b>Credits</b>            | 10 high school credits, subject to MVROP policy                        |
| <b>Course Type</b>        | Career Technical Education - IT Support / Computer Systems Foundations |
| <b>Primary Curriculum</b> | Cisco Networking Academy - IT Essentials 8                             |

#### Course Mission

Students will build entry-level IT support competence by safely assembling and servicing computer systems, installing and configuring operating systems, connecting devices to networks, applying foundational cybersecurity practices, troubleshooting systematically, documenting work, and communicating with users as professional technicians.

## 1. Course Overview

Cisco IT Essentials 8 is a hands-on CTE course built around the current Cisco Networking Academy IT Essentials Version 8 curriculum. Cisco lists the course as approximately 70 hours with 90 labs in an instructor-led format. The MVROP yearlong implementation expands that core through additional physical hardware practice, operating-system installation and configuration, networking, Packet Tracer, virtualization, troubleshooting scenarios, service documentation, career-readiness activities, and cumulative practical work. Cisco identifies the course as preparation for entry-level IT work and CompTIA A+ certification study.

## 2. Course Framework and Alignment

The syllabus integrates four complementary structures:

- Cisco Networking Academy IT Essentials 8 competencies across computer hardware, assembly, troubleshooting, networking, mobile devices, printers, virtualization/cloud, operating systems, security, professional support practices, and basic scripting.
- Hands-on technical practice using physical computer systems, approved diagnostic tools, operating systems, Packet Tracer activities, virtualization, and structured troubleshooting scenarios.
- Career Technical Education practices emphasizing electrical/ESD safety, documentation, customer support, teamwork, problem-solving, ethics, legal responsibilities, and professional communication.
- Modern technology context connecting core IT support skills to cybersecurity, cloud services, IoT, edge/AI systems, and industrial/OT environments without converting IT Essentials into an AI, cybersecurity, or OT specialization course.

## 3. Prerequisites and Student Readiness

- No formal IT prerequisite is required unless established by MVROP enrollment policy.
- Prior familiarity with computers is helpful but not required; the course begins with foundational hardware and safety concepts.

- Students must be willing to work with tools and equipment safely, read technical documentation, follow procedures, document work, troubleshoot methodically, and persist through problems that may require multiple attempts.
- Students must be prepared to protect equipment, user data, credentials, software licenses, and privacy while working within instructor-authorized systems and lab boundaries.

## 4. Student Learning Outcomes

- Identify major personal-computer components, connectors, peripherals, power requirements, storage technologies, and system form factors.
- Apply electrical, fire, ESD, battery, lifting, tool, and work-area safety procedures during technical activities.
- Disassemble, assemble, upgrade, inspect, and verify computer systems using appropriate tools and procedures.
- Configure and interpret POST, BIOS/UEFI, storage, memory, CPU, power, cooling, expansion, and other hardware settings and symptoms.
- Apply preventive-maintenance practices and a structured troubleshooting methodology to hardware and system problems.
- Explain basic networking concepts and configure common wired/wireless client connectivity, SOHO settings, services, and approved firewall/security options.
- Service and troubleshoot laptops, mobile devices, printers, and common peripherals.
- Explain virtualization and cloud-computing concepts and use approved virtualization tools for operating-system and support activities.
- Install, configure, maintain, secure, and troubleshoot Windows operating systems and common system utilities.
- Identify and perform foundational support tasks in mobile operating systems, Linux, and macOS environments.
- Recognize common security threats, apply endpoint and SOHO security practices, and follow approved malware-removal and recovery procedures.
- Use professional communication, ticket/work-order documentation, privacy practices, escalation procedures, and remote-support methods.
- Explain legal and ethical responsibilities involving licensing, PII/PHI/PCI-style data, evidence handling, and authorized technical access.
- Recognize basic scripting concepts and construct simple instructor-guided scripts in Windows and Linux environments.
- Use AI only when instructor-directed and verify AI-supported technical recommendations against evidence, documentation, and safe operating procedures.

## 5. Course Content and Tentative Pacing

Pacing will be adjusted to the MVROP calendar, student needs, lab availability, equipment readiness, and the pace required for mastery. Cisco Networking Academy lists IT Essentials 8 as approximately 70 hours with 90 labs; the yearlong MVROP course intentionally extends that foundation through repeated physical labs, imaging and configuration practice, troubleshooting, technical documentation, projects, career applications, and cumulative review.

| Instructional Block                    | Cisco ITE 8 Modules | Primary Topics                                                                                 | Hands-on Emphasis                                                                           | CTE / Modern Context                                    | Tentative Timing |
|----------------------------------------|---------------------|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------|------------------|
| 1. Hardware Foundations & Assembly     | 1-2                 | PC safety; components; tools; disassembly; complete PC assembly                                | ESD; component identification; disassembly/reassembly; power, CPU, RAM, storage and cabling | Bench safety, technician discipline, hardware lifecycle | Weeks 1-6        |
| 2. Advanced Hardware & Troubleshooting | 3-4                 | BIOS/UEFI; advanced hardware; power; upgrades; preventive maintenance; troubleshooting process | Firmware settings; upgrades; multimeter/power-supply tester; symptom isolation; maintenance | Evidence-based repair and preventive maintenance        | Weeks 7-10       |

| Instructional Block                      | Cisco ITE 8 Modules | Primary Topics                                                                                                     | Hands-on Emphasis                                                                                            | CTE / Modern Context                                           | Tentative Timing |
|------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|------------------|
| 3. Networking & Applied Connectivity     | 5-6                 | Network concepts; protocols; media; addressing; SOHO; wireless; firewall; IoT                                      | NIC configuration; Packet Tracer; wired/wireless connectivity; SOHO/security settings; diagnostics           | Foundation for CCNA, cybersecurity, IoT and connected devices  | Weeks 11-15      |
| 4. Mobile Devices & Printers             | 7-8                 | Laptops; mobile devices; repair/upgrade; printer types, configuration, maintenance and troubleshooting             | Laptop components; mobile support; printer setup; maintenance; problem isolation                             | Field support, peripherals, mobile workforce                   | Weeks 16-19      |
| 5. Virtualization, Cloud & Windows       | 9-11                | Virtualization; cloud; Windows installation; Windows configuration, tools, networking and troubleshooting          | VM creation; Windows install/configure; accounts; storage; networking; remote access; OS troubleshooting     | Modern endpoint administration, cloud/virtual infrastructure   | Weeks 20-27      |
| 6. Multi-OS & Security                   | 12-13               | Mobile OS; Linux; macOS; threats; malware; endpoint/SOHO security; security troubleshooting                        | Command-line/GUI support; hardening; malware-response workflow; secure wireless; documentation               | Bridge to cybersecurity operations and secure support          | Weeks 28-32      |
| 7. IT Professional, Scripting & Capstone | 14 + cumulative     | Communication; documentation; ethics/legal issues; forensics awareness; help desk; remote support; basic scripting | Work orders; customer scenarios; remote technician labs; Windows/Linux scripts; cumulative service challenge | Employability, escalation, accountability and career readiness | Weeks 33-36      |

## 6. AI, Cybersecurity, Networking, IoT, and OT Context

- IT Essentials 8 remains an IT support and computer-systems foundation course. The topics below are used to show why hardware, operating-system, networking, and security competence matters in modern technical environments; they are not separate specializations within the course.
- AI and Edge Computing: Students connect CPU/GPU capability, memory, storage, cooling, power, operating systems, drivers, networking, and troubleshooting to the physical infrastructure required by AI-enabled endpoints and edge systems.
- Cybersecurity: Endpoint hardening, malware response, permissions, firewall settings, secure wireless, user awareness, evidence handling, and professional authorization reinforce secure support practices.
- Networking and IoT: IT Essentials 8 includes network concepts, applied wired/wireless connectivity, Packet Tracer activities, SOHO configuration, and IoT-device examples that prepare students for deeper networking study.
- OT Context: Industrial and operational devices may be introduced as examples of specialized endpoints and edge systems; detailed OT cybersecurity remains an embedded strand within cybersecurity coursework rather than a separate IT Essentials course.
- AI Use in Class: Generative AI may assist with instructor-authorized research, explanation, documentation review, or troubleshooting hypotheses, but students must verify outputs and demonstrate the underlying technical skill independently.

## 7. Instructional Methods

- Instructor demonstrations followed by guided and independent hands-on practice.
- Cisco Networking Academy modules, labs, interactive activities, quizzes, and skills practice.
- Physical computer disassembly, assembly, upgrade, maintenance, and troubleshooting activities.
- Operating-system installation, configuration, command-line, permissions, networking, security, and recovery tasks.
- Packet Tracer networking/IoT activities and instructor-approved network diagnostic exercises.
- Virtualization and multi-operating-system labs using school-managed systems and approved software.

- Printer, laptop, mobile-device, help-desk, work-order, remote-support, and customer-communication scenarios.
- Structured troubleshooting requiring symptoms, evidence, hypothesis, action, verification, and documentation.
- Instructor-authorized AI-supported activities when they reinforce rather than replace technical skill and reasoning.

## 8. Primary Resources and Technology

- Cisco Networking Academy - IT Essentials 8 curriculum and instructor-assigned labs.
- School-managed Windows computers and approved operating-system images/software.
- Desktop computer systems and components designated for disassembly, assembly, upgrade, and troubleshooting.
- ESD protection, hand tools, multimeters, power-supply testers, cabling, adapters, storage devices, memory, and other instructor-approved hardware.
- Cisco Packet Tracer for selected networking, wireless, firewall, and IoT activities contained in or supporting the curriculum.
- Instructor-approved virtualization software and Linux/macOS/mobile demonstrations or lab environments where available.
- Printers, laptops, mobile-device examples, peripherals, and support documentation as available.
- Instructor-provided service tickets, work orders, troubleshooting cases, technical references, and current industry examples.

### SCHOOL-MANAGED DEVICES ONLY

Personal laptops and unapproved computing devices may not be connected to the classroom or lab network. Students will use school-managed systems and instructor-approved equipment, media, tools, and software.

## 9. Assessment and Grading

The proposed grading categories below may be adjusted to conform to final MVROP grading policy and instructor implementation. Students are evaluated on technical accuracy, demonstrated skill, troubleshooting process, safety, documentation, and professional practice.

| Category                              | Weight | Examples                                                                                                      |
|---------------------------------------|--------|---------------------------------------------------------------------------------------------------------------|
| Hands-on labs and technical skills    | 35%    | Assembly, hardware service, OS configuration, networking, printers, security, virtualization, troubleshooting |
| Projects and applied support work     | 25%    | Repair/support scenarios, work orders, system builds, imaging/configuration tasks, capstone                   |
| Unit assessments                      | 25%    | Quizzes, tests, practical skills checks, troubleshooting assessments                                          |
| Cisco coursework and knowledge checks | 10%    | NetAcad modules, quizzes, interactive activities, review                                                      |
| Professional practice                 | 5%     | Preparedness, safety, documentation, teamwork, equipment care, communication, ethical conduct                 |

## 10. Assignment Submission and Late-Work Policy

- Assignments are due by the date and time posted by the instructor. Students are responsible for checking the learning-management system and maintaining current work throughout the term.
- Students should communicate early when illness, an approved absence, an accommodation, or an emergency affects completion of work. Extensions are not automatic and must be arranged in accordance with MVROP policy.
- Technical work may require revision after feedback. Revision opportunities, when offered, must be completed by the published deadline.

**ABSOLUTELY NO BULK END-OF-TERM SUBMISSIONS**

Multiple missing assignments submitted during the final week of a semester or the year-end grading period will not be accepted or graded. Students are expected to remain current throughout the term. This restriction does not eliminate legally required accommodations or individually approved exceptions established before the final week.

## 11. Artificial Intelligence Use for Coursework

- Artificial intelligence may be used for assignments only at the direction and under the guidance of the instructor. AI is a professional tool, not a substitute for student reasoning, technical skill, evidence, or accountability.
- Use AI only when the instructor explicitly authorizes it for the assignment or activity.
- Follow the stated purpose, tool, account, prompt, data, and collaboration restrictions.
- Do not enter student records, passwords, personally identifiable information, medical information, confidential school information, proprietary data, device credentials, software license keys, network credentials, or live security information into an AI system.
- Verify AI-generated hardware recommendations, commands, scripts, troubleshooting steps, calculations, citations, and technical explanations before use.
- Disclose and document AI assistance when required, including prompts, outputs, revisions, and sources.
- Do not use AI to complete an assessment, generate an entire submission, conceal a lack of understanding, fabricate lab results, or misrepresent authorship.
- Students remain responsible for the accuracy, safety, legality, ethics, and quality of all submitted work, regardless of AI assistance.
- The instructor may require students to reproduce, explain, defend, or complete work without AI support.

## 12. IT Ethics, Authorization, and Academic Integrity

- All repair, configuration, imaging, diagnostic, network, security, scripting, and troubleshooting activities must remain within instructor-approved systems, accounts, devices, media, software, simulations, and lab boundaries.
- Students may not access another person's files, accounts, devices, credentials, or data without explicit authorization.
- Students may not install unauthorized software, bypass controls, alter managed-device protections, scan or probe networks, or connect unapproved hardware to MVROP or school-district systems.
- Account sharing, password sharing, plagiarism, unauthorized collaboration, copied lab results, fabricated screenshots or service tickets, and undisclosed AI-generated work are prohibited.
- Students must protect device information, customer-style work orders, credentials, configuration data, software licenses, and any information designated by the instructor as privileged or restricted.
- Violations may result in loss of lab privileges, academic consequences, referral to administration, and other action under applicable policy or law.

## 13. Classroom and Laboratory Safety

- Follow all instructor directions before opening, powering, cabling, moving, disassembling, assembling, testing, or repairing equipment.
- Use electrostatic-discharge (ESD) controls, personal protective equipment, approved tools, and safe lifting techniques when directed.
- Disconnect power and follow required discharge/safety procedures before servicing equipment. Never open or service power supplies, CRT devices, or other high-voltage components unless the activity is explicitly designed and supervised for safe instruction.
- Maintain clear work areas and manage power, network, USB, and peripheral cables to prevent trip, electrical, and equipment hazards.

- Do not connect personal laptops, storage devices, adapters, hotspots, switches, routers, access points, or other computing/network equipment without permission.
- Report damaged equipment, sharp edges, exposed wiring, overheating, unusual odors, swelling batteries, spills, safety concerns, and cybersecurity incidents immediately.
- Do not remove equipment, media, components, tools, software, configuration files, or documents from the classroom or lab without authorization.

#### **NO FOOD OR DRINK**

Food and beverages are not permitted in the classroom or laboratory. This prohibition protects students and electrical, computer, and network equipment. Any medically required exception must be handled in accordance with applicable accommodation and safety procedures.

## **14. MVROP Cell Phone & Electronic Device Policy**

### **MVROP Cell Phone & Electronic Device Policy Tentative pending Board approval Fall of 2026**

To prepare you for professional industry standards and comply with California state law (AB 3216 / CA Education Code § 48901.7), our class follows a "Workplace-First" device policy.

#### **1. Expectation: Off & Away**

**Unless explicit permission is given, all personal devices (phones, smartwatches, earbuds) must be turned off/silenced and stored out of sight in your backpack or assigned caddy.**

#### **2. Academic & CTE Exceptions**

**Your phone is a professional tool when used appropriately. Devices are only permitted when authorized by the instructor for relevant coursework, such as:**

Accessing digital blueprints, safety manuals, or specialized software.

Scanning diagnostic QR codes or photographing lab/portfolio projects.

Participating in class check-ins or quick assessments.

*Note: Academic permission is never an allowance for social media, texting, gaming, or unauthorized photos/videos.*

#### **3. Safety & Professionalism**

**Zero Tolerance in Active Labs:** Phones and earbuds are strictly prohibited near machinery, power tools, lifts, welding equipment, or during clinical procedures. Distraction is a major safety hazard.

**Privacy:** Unauthorized audio or visual recording in labs or changing areas is strictly forbidden.

#### **4. Legal & Medical Exemptions**

**Per state law, devices may be accessed for documented medical monitoring (e.g., glucose tracking), IEP/504 accommodations, or genuine emergency situations.**

#### **Implementation Notice**

This device-policy language is tentative pending final MVROP Board approval for Fall 2026 and must be conformed to the final Board-adopted policy, applicable sending-district requirements, student safety procedures, and California law.

## **15. Device-Policy Enforcement**

- The instructor will use progressive classroom interventions consistent with the final MVROP policy and applicable student-discipline procedures.
- Unauthorized device use may result in the device being placed in the assigned storage location, loss of discretionary device privileges, parent/guardian contact, administrative referral, or other consequences authorized by policy.
- A student may not use a personal device to photograph, record, livestream, or distribute another person's image, voice, work, screen, credentials, or private information without authorization.
- Refusal to follow a safety-related direction may result in immediate removal from the active lab area.

## 16. Attendance, Participation, and Professional Standards

- Regular attendance is essential because many hardware, operating-system, networking, printer, troubleshooting, and support-desk activities cannot be fully replicated independently.
- Students are expected to arrive on time, prepared to work, and ready to follow the daily lab status and safety briefing.
- Professional conduct includes respectful communication, accurate documentation, methodical troubleshooting, care of equipment, accountability for assigned roles, and constructive participation.
- Students who miss class are responsible for obtaining instructions and completing eligible make-up work within the permitted timeline.

## 17. Student Support, Accessibility, and Accommodations

MVROP will provide support and legally required accommodations in accordance with applicable law, Board policy, IEPs, Section 504 plans, English-learner supports, and documented student needs. Students should communicate with the instructor, counselor, case manager, or administrator as early as possible when support is needed. Accommodations do not waive safety, ethics, authorization, or academic-integrity requirements, but may change how a student accesses instruction or demonstrates learning.

## 18. Certification and Pathway Preparation

- Cisco Networking Academy identifies IT Essentials 8 as preparation for foundational IT careers and CompTIA A+ certification study.
- Because external certification exams are updated independently, students should use the certification provider's current objectives at the time they test; completion of IT Essentials 8 does not guarantee coverage of every future exam objective.
- The course provides a foundation for continued study in CCNA networking, cybersecurity, operating systems, cloud/virtualization, IT support, and related CTE pathways.
- Completion of the course does not guarantee certification, employment, college credit, or placement. Testing eligibility, fees, accommodations, and procedures are governed by the certification provider, MVROP, and the testing center.

## 19. Student and Parent/Guardian Acknowledgment

By signing below, the student and parent/guardian acknowledge that they have reviewed this syllabus, understand the course expectations, and agree to support safe, ethical, professional, and timely participation. The signatures also acknowledge the following key requirements:

Hardware, software, repair, network, and security activities are permitted only within instructor-authorized systems and lab boundaries.

AI may be used only when and how the instructor authorizes it.

Personal devices must comply with the Workplace-First device policy and active-lab safety restrictions.

Food and drink are prohibited in the classroom and laboratory, except as formally authorized.

Multiple missing assignments submitted during the final week of a semester or year-end grading period will not be graded.

The device-policy section remains tentative pending final Board action and will be updated to match adopted policy.

| Acknowledgment               | Name / Signature | Date |
|------------------------------|------------------|------|
| Student Name (print)         |                  |      |
| Student Signature            |                  |      |
| Parent/Guardian Name (print) |                  |      |
| Parent/Guardian Signature    |                  |      |
| Best Contact Email/Phone     |                  |      |

Questions or concerns: Please contact the instructor through the official MVROP communication channel.

## 20. Framework References

Cisco Networking Academy, IT Essentials 8 - current course catalog (approximately 70 hours; 90 labs; instructor-led).

Cisco Networking Academy, IT Essentials Version 8 Education Standards mapping (2023), including NICE, NGSS, ITEA, DoDEA, CSTA, and associated technical exam-objective mappings.

California Assembly Bill 3216 (Phone-Free Schools Act) and California Education Code § 48901.7.