

# COMPUTER NETWORKING/ INFORMATION TECHNOLOGY

The Computer Networking/IT program prepares students for excellent career opportunities that are in demand such as an IT support specialist, network specialist, network engineer, network administrator, cybersecurity professional, WLAN specialist, cloud and virtualization specialist, and IT sales positions. Every CNIT course is mapped to a specific IT industry certification exam to help ensure that the training is current and prepares students for IT jobs that are in demand.

The program offers several pathways to recognize academic achievement and career readiness including:

- CNIT Associate in Science Degree
- CNIT Certificate of Achievement
- Cybersecurity Certificate of Achievement
- Proficiency Awards in specific areas of IT

Due to our academic partnerships with prominent technology industry leaders, most CNIT courses come with either free or significantly discounted curriculum costs. Our program students are also entitled to significant academic discounts on IT certification exam vouchers. We are a Cisco Networking Academy, CompTIA Academy Partner Program, Amazon AWS Academy, Red Hat Linux Academy, Microsoft Azure for Education Partner, and TestOut Academic Partner. Through these collaborations, we aim to provide our students with access to the latest technologies and tools, to help ensure that they stay ahead of the curve in today's rapidly evolving IT landscape.

The CNIT program has a robust IT internship program that provides students with the opportunity to gain valuable IT experience with a public or private sector organization while also earning an elective unit that can be applied to the degree. The IT internship provides valuable real-world IT experience and soft skills development while building relationships with professionals in the field.

## CNIT R101 IT Essentials 3 Units

*Formerly:* ENGT R150

*In-Class Hours:* 43.75 lecture, 26.25 laboratory

This course is a technical introduction to computing devices and the operating systems they run. Additional course topics include the essentials of computer networks, wireless networking, cybersecurity, and printers. This course also covers soft skill topics such as customer service and communication. Students will gain a solid foundation in information technology that will help prepare them for entry-level positions in IT as well as the more advanced computer networking courses in the CNIT program.

**Grade Modes:** Letter Graded, Credit by exam, license etc.

**Field Trips:** May be required

**Degree Applicability:** Applies to Associate Degree

**AA/AS GE:** None

**Transfer Credit:** CSU, UC

**UC Credit Limitations:** None

**CSU GE-Breadth:** None

**IGETC:** None

## CNIT R120 Cisco CCNA Computer Networking I 4 Units

*Formerly:* ENGT R120

*In-Class Hours:* 52.5 lecture, 52.5 laboratory

*C-ID:* ITIS 150

This course is offered by the Oxnard College Cisco Networking Academy. It covers foundation level computer networking including cabling, network topologies, local area networks (LANs), Ethernet, switching, routing, IPv4 and IPv6 addressing, TCP/IP protocols, and the Open Systems Interconnection (OSI) Model. The fundamentals of wireless networking and network security are also covered in this course. Students will develop networking skills in this course from hands-on labs as well as the ability to troubleshoot common networking problems. This is one of the essential courses to take on the pathway towards preparation for the Cisco CCNA certification and this is an appropriate first course to take in the CNIT program.

**Grade Modes:** Letter Graded, Credit by exam, license etc.

**Field Trips:** May be required

**Degree Applicability:** Applies to Associate Degree

**AA/AS GE:** None

**Transfer Credit:** CSU

**UC Credit Limitations:** None

**CSU GE-Breadth:** None

**IGETC:** None

## CNIT R121 Cisco CCNA Computer Networking II 4 Units

*Formerly:* ENGT R121

*In-Class Hours:* 52.5 lecture, 52.5 laboratory

*Prerequisites:* CNIT R120

*C-ID:* ITIS 151

This course is taken after students have acquired foundation-level computer networking knowledge from CNIT R120 (Cisco CCNA Networking I). The following topics are covered in this course: Static routing, dynamic routing protocols (RIPv2/EIGRP/OSPF), network address translation (NAT) and port address translation (PAT), Virtual Local Area Networks (VLANs), Access-Control Lists (ACLs), and DHCP. These topics are covered from the perspective of supporting networks using IPv4 or IPv6 addressing. Computer network security is emphasized in this course including port security, authentication, encryption, and analyzing protocol traffic. The curriculum is provided by the Cisco Networking Academy at no additional charge to students.

**Grade Modes:** Letter Graded, Credit by exam, license etc.

**Field Trips:** May be required

**Degree Applicability:** Applies to Associate Degree

**AA/AS GE:** None

**Transfer Credit:** CSU

**UC Credit Limitations:** None

**CSU GE-Breadth:** None

**IGETC:** None

**CNIT R127 Wireless Networking Fundamentals 3 Units***Formerly:* ENGT R127*In-Class Hours:* 43.75 lecture, 26.25 laboratory

This course covers the fundamentals of wireless networking technology. At the completion of this course, students will have the ability to design, implement, administer, secure, and troubleshoot a wireless local area network (WLAN). This course is also helping to prepare students for a vendor-neutral wireless certification exam from the Certified Wireless Network Professionals (CWNP) organization.

**Grade Modes:** Letter Graded, Credit by exam, license etc.**Field Trips:** May be required**Degree Applicability:** Applies to Associate Degree**AA/AS GE:** None**Transfer Credit:** CSU**UC Credit Limitations:** None**CSU GE-Breadth:** None**IGETC:** None**CNIT R130 Administer Microsoft Windows Desktop Operating System 3 Units***Formerly:* ENGT R130*In-Class Hours:* 43.75 lecture, 26.25 laboratory*Advisories/Rec Prep:* CNIT R101

This course prepares students to deploy, configure, and secure the Windows 10 operating system for an enterprise setting. This course also covers virtualizing Windows 10 using Hyper-V and securing apps. Students who successfully complete this course should be prepared for the Microsoft Windows 10 (MD-100) and Managing Modern Desktops (MD-101) certification exams. Completing this course effectively prepares students to earn their Microsoft 365 Certified: Modern Desktop Administrator Associate certification.

**Grade Modes:** Letter Graded, Credit by exam, license etc.**Field Trips:** May be required**Degree Applicability:** Applies to Associate Degree**AA/AS GE:** None**Transfer Credit:** CSU**UC Credit Limitations:** None**CSU GE-Breadth:** None**IGETC:** None**CNIT R131 Administer Microsoft Windows Server 3 Units***Formerly:* ENGT R131*In-Class Hours:* 43.75 lecture, 26.25 laboratory*Advisories/Rec Prep:* CNIT R130*C-ID:* ITIS 155

This course prepares students to administer the most recent version of the Microsoft Windows Server operating system while preparing students to become certified. Students will learn how to administer a network and manage resources including: configuring server roles, automating server deployments, setting up DHCP and DNS services, designing an Active Directory infrastructure, planning file and print services, managing user accounts, maintaining server availability with clusters, automating backups, virtualization, and deploying updates and security features.

**Grade Modes:** Letter Graded, Credit by exam, license etc.**Field Trips:** May be required**Degree Applicability:** Applies to Associate Degree**AA/AS GE:** None**Transfer Credit:** CSU**UC Credit Limitations:** None**CSU GE-Breadth:** None**IGETC:** None**CNIT R142 CompTIA A+ Technician and Certification Preparation 4 Units***Formerly:* ENGT R142*In-Class Hours:* 52.5 lecture, 52.5 laboratory*C-ID:* ITIS 110

This course provides instruction and hands-on training in the areas of hardware installation, software configuration, diagnostics and troubleshooting, preventative maintenance, basic networking, basic security, wireless, and operating systems including Microsoft Windows, Android, and Apple OS X. Students will also receive instruction on safety and environmental considerations as it relates to computing environments. In addition, this course prepares students for the CompTIA A+ certification exam. Oxnard College is a CompTIA Authorized Partner Program which entitles our students to significant discounts on CompTIA certification vouchers.

**Grade Modes:** Letter Graded, Credit by exam, license etc.**Field Trips:** May be required**Degree Applicability:** Applies to Associate Degree**AA/AS GE:** None**Transfer Credit:** CSU**UC Credit Limitations:** None**CSU GE-Breadth:** None**IGETC:** None**CNIT R143 Linux Fundamentals 3 Units***Formerly:* ENGT R143*In-Class Hours:* 43.75 lecture, 26.25 laboratory

This course provides instruction and hands-on training on the fundamentals of the Linux operating system. Students will gain an understanding of an open-source operating system, perform a Linux installation, administer user accounts, configure file settings, and customize settings of the operating system. The course will also cover networking with Linux, the command-line interface, security issues, and interoperability with other operating systems. Also, this course prepares students for the Red Hat Linux System Administration I Certification.

**Grade Modes:** Letter Graded, Credit by exam, license etc.**Field Trips:** May be required**Degree Applicability:** Applies to Associate Degree**AA/AS GE:** None**Transfer Credit:** CSU**UC Credit Limitations:** None**CSU GE-Breadth:** None**IGETC:** None

### CNIT R144 CompTIA Network+ Fundamentals and Certification Preparation 4 Units

Formerly: ENGT R144

*In-Class Hours:* 52.5 lecture, 52.5 laboratory

*C-ID:* ITIS 150

The CompTIA Network+ certification is an internationally recognized validation of the technical knowledge required of foundation-level IT network practitioners. A student who successfully completes this course should have the knowledge and hands-on skills necessary to design, install, manage, and troubleshoot a network infrastructure for both wired and wireless networks. This course will also cover network security basics. Students who successfully complete this course should be prepared for the CompTIA Network+ certification. CompTIA certification voucher discounts are available to all CNIT program students.

**Grade Modes:** Letter Graded, Credit by exam, license etc.

**Field Trips:** May be required

**Degree Applicability:** Applies to Associate Degree

**AA/AS GE:** None

**Transfer Credit:** CSU

**UC Credit Limitations:** None

**CSU GE-Breadth:** None

**IGETC:** None

### CNIT R145 CompTIA Security+ IT Security and Certification Preparation 3 Units

Formerly: ENGT R145

*In-Class Hours:* 43.75 lecture, 26.25 laboratory

*Advisories/Rec Prep:* CNIT R101 or CNIT R120 or CNIT R142 or CNIT R144

*C-ID:* ITIS 160

The CompTIA Security+ course covers a wide variety of IT security topics at a foundation level including host security, network security, security issues related to cloud computing, vulnerabilities and threats, risk assessment and risk mitigation, and security policies. The course also covers access control, identity management, incident management, wireless network security, and cryptography. This course includes hands on cybersecurity training labs. Students who successfully complete this course should be prepared for the CompTIA Security+ certification exam which is the first security certification IT professionals should earn. It establishes the core knowledge required of any cybersecurity role and provides a springboard to intermediate-level cybersecurity jobs.

**Grade Modes:** Letter Graded, Credit by exam, license etc.

**Field Trips:** May be required

**Degree Applicability:** Applies to Associate Degree

**AA/AS GE:** None

**Transfer Credit:** CSU

**UC Credit Limitations:** None

**CSU GE-Breadth:** None

**IGETC:** None

### CNIT R146 Cybersecurity: Fundamentals of Ethical Hacking 3 Units

*In-Class Hours:* 43.75 lecture, 26.25 laboratory

*Advisories/Rec Prep:* CNIT R145

*C-ID:* ITIS 164

This course helps to prepare students for a lucrative career in cybersecurity. Students will learn the methods to perform a vulnerability scan and subsequently a penetration test on host-based and network-based systems. Students will learn how to interpret the results, write detailed summary reports, and recommend mitigation strategies. This course prepares students for the TestOut Ethical Hacker Pro and the EC-Council Certified Ethical Hacker Certification Exams.

**Grade Modes:** Letter Graded, Credit by exam, license etc.

**Field Trips:** May be required

**Degree Applicability:** Applies to Associate Degree

**AA/AS GE:** None

**Transfer Credit:** CSU

**UC Credit Limitations:** None

**CSU GE-Breadth:** None

**IGETC:** None

### CNIT R151 Cloud Computing and Virtualization 4 Units

*In-Class Hours:* 52.5 lecture, 52.5 laboratory

*Advisories/Rec Prep:* CNIT R101 or CNIT R120 or CNIT R142

This course educates students about cloud computing, cloud deployment and service models, cloud infrastructure, cloud backup and storage, security issues related to the cloud, and how to leverage the cloud for cost savings. Students will also gain experience with the most popular cloud computing platforms in the market including Google Cloud, Amazon AWS, and Microsoft Azure.

**Grade Modes:** Letter Graded, Credit by exam, license etc.

**Field Trips:** May be required

**Degree Applicability:** Applies to Associate Degree

**AA/AS GE:** None

**Transfer Credit:** CSU

**UC Credit Limitations:** None

**CSU GE-Breadth:** None

**IGETC:** None

### CNIT R161 Programming Essentials in Python 3 Units

*In-Class Hours:* 43.75 lecture, 26.25 laboratory

*C-ID:* ITIS 130

How great would it be to write your own computer program or design a modern web or desktop application? Both are a possibility if you learn how to code in Python. Python is the very versatile, object-oriented programming language used by startups and tech giants, Google, Facebook, Dropbox and IBM. Python is also recommended for aspiring young developers who are interested in pursuing careers in security, networking, artificial intelligence (AI), machine learning, and Internet-of-Things. This course utilizes the Cisco Networking Academy PCAP Python curriculum.

**Grade Modes:** Letter Graded, Credit by exam, license etc.

**Field Trips:** May be required

**Degree Applicability:** Applies to Associate Degree

**AA/AS GE:** None

**Transfer Credit:** CSU, UC

**UC Credit Limitations:** None

**CSU GE-Breadth:** None

**IGETC:** None

**CNIT R170 Introduction to Artificial Intelligence 3 Units***In-Class Hours:* 43.75 lecture, 26.25 laboratory*Advisories/Rec Prep:* CNIT R161

This course is designed to provide students with a foundational understanding of Artificial Intelligence (AI) concepts, techniques, and applications. The course will cover the history of AI, basic principles, and various AI techniques such as machine learning, natural language processing, and computer vision. Students will gain hands-on experience with AI tools, including popular AI apps, and explore the ethical considerations of AI in the real world.

**Grade Modes:** Letter Graded, Credit by exam, license etc.**Field Trips:** May be required**Degree Applicability:** Applies to Associate Degree**AA/AS GE:** None**Transfer Credit:** CSU, UC**UC Credit Limitations:** None**CSU GE-Breadth:** None**IGETC:** None**CNIT R180 Certification Preparation 1 Unit***In-Class Hours:* 8.75 lecture, 26.25 laboratory*Enrollment Limitations:* Student must have previously taken a 3 or 4 unit CNIT course.

This course is designed to be taken after a student has completed a full semester 3 or 4 unit CNIT course that is mapped to a specific IT industry certification exam such as Cisco, CompTIA, Microsoft, etc. The purpose of this course is to provide focused certification preparation prior to a student actually taking the actual certification exam at a testing center such as PearsonVUE.

**Grade Modes:** Pass/No Pass Grading**Degree Applicability:** Applies to Associate Degree**AA/AS GE:** None**Transfer Credit:** CSU**UC Credit Limitations:** None**CSU GE-Breadth:** None**IGETC:** None**CNIT R191A Work Experience Education in Computer Networking / Information Technology I 1-14 Units***In-Class Hours:* 54-756 paid cooperative*Enrollment Limitations:* Instructor approval and completion of or concurrent enrollment in one course within the work experience discipline.

Work Experience Education provides supervised employment extending classroom occupational learning at an on-the-job learning station relating to the students' educational or occupational goals. Each unit of credit requires 54 hours of employment during the semester. Work Experience Education is available to all students.

**Catalog Notes:** Students may enroll in up to 14 units of work experience education per semester or term; There is no limit to the number of terms for which a student may enroll in work experience education.

**Grade Modes:** Pass/No Pass Grading**Field Trips:** May be required**Degree Applicability:** Applies to Associate Degree**AA/AS GE:** None**Transfer Credit:** CSU**UC Credit Limitations:** None**CSU GE-Breadth:** None**IGETC:** None**CNIT R191B Work Experience Education in Computer Networking / Information Technology II 1-14 Units***In-Class Hours:* 54-756 paid cooperative*Enrollment Limitations:* Instructor approval and completion of or concurrent enrollment in one course within the work experience discipline.

Work Experience Education provides supervised employment extending classroom occupational learning at an on-the-job learning station relating to the students' educational or occupational goals. Each unit of credit requires 54 hours of employment during the semester. Work Experience Education is available to all students.

**Catalog Notes:** Students may enroll in up to 14 units of work experience education per semester or term; There is no limit to the number of terms for which a student may enroll in work experience education.

**Grade Modes:** Pass/No Pass Grading**Field Trips:** May be required**Degree Applicability:** Applies to Associate Degree**AA/AS GE:** None**Transfer Credit:** CSU**UC Credit Limitations:** None**CSU GE-Breadth:** None**IGETC:** None**CNIT R191C Work Experience Education in Computer Networking / Information Technology III 1-14 Units***In-Class Hours:* 54-756 paid cooperative*Enrollment Limitations:* Instructor approval and completion of or concurrent enrollment in one course within the work experience discipline.

Work Experience Education provides supervised employment extending classroom occupational learning at an on-the-job learning station relating to the students' educational or occupational goals. Each unit of credit requires 54 hours of employment during the semester. Work Experience Education is available to all students.

**Catalog Notes:** Students may enroll in up to 14 units of work experience education per semester or term; There is no limit to the number of terms for which a student may enroll in work experience education.

**Grade Modes:** Pass/No Pass Grading**Field Trips:** May be required**Degree Applicability:** Applies to Associate Degree**AA/AS GE:** None**Transfer Credit:** CSU**UC Credit Limitations:** None**CSU GE-Breadth:** None**IGETC:** None

- Computer Networking Information Technology, Associate in Science (<http://catalog.vcccd.edu/oxnard/programs-courses/computer-networking-information-technology/computer-networking-information-technology-as/>)
- Computer Networking Information Technology, Certificate of Achievement (<http://catalog.vcccd.edu/oxnard/programs-courses/computer-networking-information-technology/computer-networking-information-technology-coa/>)
- Cybersecurity, Certificate of Achievement (<http://catalog.vcccd.edu/oxnard/programs-courses/computer-networking-information-technology/cybersecurity-coa/>)
- Administering Microsoft Windows, Proficiency Award (<http://catalog.vcccd.edu/oxnard/programs-courses/computer-networking-information-technology/administering-microsoft-windows-pa/>)

- Cisco Networking, Proficiency Award (<http://catalog.vcccd.edu/oxnard/programs-courses/computer-networking-information-technology/cisco-networking-pa/>)
- Wireless Networking, Proficiency Award (<http://catalog.vcccd.edu/oxnard/programs-courses/computer-networking-information-technology/wireless-networking-pa/>)

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