

# TELECOMMUNICATIONS CABLING AND NETWORK ENGINEERING



## INTERNATIONAL STUDENTS PREREQUISITES

International Students Prerequisites

- IELTS LEVEL 5.5 (if English is not your first language).
- Australian year 10 or equivalent. Eg. G.C.E. O LEVEL

TOTAL NOMINAL HOURS 1440

TOTAL DURATION 72 Weeks (Excluding breaks)

### Disclaimer

Offer of course units is subject to student number viability. Information in course summaries is subject to change prior to commencement of course units. This document, together with the pre-enrolment information and course unit outlines form the full and complete description of this course.



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## TELECOMMUNICATIONS CABLING AND NETWORK ENGINEERING



- ICT50210 Diploma of Telecommunications Network Engineering
- ICT40210 Certificate IV in Telecommunications Network Engineering
- ICT20210 Certificate II in Telecommunications
- Sun Certified System Administrator (SCSA)
- Cisco Certified Networking Associate (CCNA)
- CompTIA Project+
- CompTIA Network+

Australian College of Information Technology  
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## OVERVIEW

The Telecommunications Cabling and Network Engineering Program is for anyone seeking a successful career in Telecommunication, Systems Administration, Systems Integration, or VoIP based telephony services.

The program consists of a series of powerful industry certification training modules as well as practical training on how to plan and implement a business grade Voice over Internet Protocol (VoIP) solution. These modules teach students the core body of knowledge within these highly in demand certifications and prepare students to take the respective international certification exams. The certifications taught are CompTIA Network+ Cisco Certified Networking Associate (CCNA) and Sun Certified Systems Administrator (SCSA). The training is relevant, practical, and hands on.

The program provides a foundation for further study towards, CCNP, CCIE, Network Security Specialist, or a university degree.

### Possible Vocational Outcomes

- Telecommunications Field Engineer
- Telecommunications Network Engineer
- Systems Integration Engineer
- VoIP Specialist
- Data Cable Installer
- Project Manager
- Network Manager
- Systems Administrator
- User /Technical Support Officer

## QUALIFICATIONS AND ACCREDITATIONS

The nationally recognized qualification covered in the program are:

- ICT50210 Diploma of Telecommunications Network Engineering
- ICT40210 Certificate IV in Telecommunications Network Engineering

The industry certifications taught in the course are:

- Sun Certified System Administrator (SCSA)
- Cisco Certified Networking Associate (CCNA)
- CompTIA Project+
- CompTIA Network+

Note: Students can obtain the nationally recognized qualification without industry certification



## SUBJECT AREAS

The Telecommunications Cabling and Network Engineering Program has 6 subject areas. Each subject area covers a specific Telecommunications topic in detail. Each subject consists of a specified number of hours, which may include lectures, tutorials, supervised practical exercises, assignments, online courses, and directed private study.

### INTRODUCTION TO TELECOMMUNICATIONS WORK

This subject covers the essential prerequisites for further studies in telecommunications and networking. The subject explores basic concepts such as voltage, current, power and resistance in electrical circuits. Students should gain an understanding of the OHS principles associated with telecommunications work and the construction industry.

The subject covers:

- Fundamentals of Electricity
- Current
- Voltage
- Resistance
- Ohm's Law
- Electrical Measurements – Meters
- Power
- Sustainable work practices
- OHS



### DATA CABLING

The Data Cabling subject area is for new entrants to the telecommunications industry. The subject meets the Australian Communications and Media Authority (ACMA) requirements for Cabling Provider Rules (CPR) restricted registration, by providing the required training for new entrants to obtain a (CPR) restricted registration. Students will learn how to install, secure and terminate data cables. The subject provides a foundation for further studies in Telecommunications Network Engineering or related streams.

The subject covers:

- Australian Regulatory Environment
- Cabling Practices to S009:2006
- Customer Switching Systems
- Introduction to ADSL
- Installation Practices



### NETWORK+

The Network+ subject area provides students with a comprehensive understanding of how to build and configure computer networks. Students are provided with a practical hands-on approach to building and configuring computer networks and installing and configuring commonly used network operating systems. The subject provides a theory foundation and practical skills for a career in network installation and servicing and is a foundation for further studies towards a career in network administration, network engineering, and system administration. The course covers the Network+ certification exam objectives. Upon conclusion of this subject, students will have a working knowledge of:

- Network Protocols
- Networking Hardware
- WANs, Internet Access, and Remote Connectivity
- Network Operating Systems
- In-Depth TCP/IP Networking
- Network Security
- Enterprise Wireless Networks



## UNIX (SOLARIS) NETWORKING AND ADMINISTRATION

The UNIX (Solaris) subject area provides students with the necessary knowledge and skills to use components of the desktop system, manage files and directories, create and modify files, control the user work environment, archive files, and use remote commands. In addition, this course explains fundamental command-line features of the Solaris Operating System (Solaris OS), including file system navigation, the vi text editor, file permissions, access control lists (ACLs), command shells, file compression, basic network use, and reading shell scripts. The subject also provides a practical, hands-on, guided experience working with Sun's virtualization capabilities, collectively known as Solaris Containers. Solaris Zones and Solaris Resource Controls combine to create Solaris Containers. Students should gain the knowledge critical to properly implement and manage these important capabilities in the Solaris Operating System. The subject area also covers firewall configuration, and implementation of UNIX server applications including, mail, messaging, and web servers.

This subject will enable students to perform essential system administration procedures on the Solaris 10 Operating System (Solaris OS) and administer networked servers running on the Solaris OS. The subject provides a path to validation of skills as a Sun Certified System Administrator (SCSA)

### CISCO CCNA

Cisco Systems is the worldwide leader in networking for the Internet. Cisco is recognized as an innovator in how business is conducted, pioneering the use of networks and the Internet to provide customer support, sell products, offer training and manage finances. The CCNA certification (Cisco Certified Network Associate) indicates a foundation in and apprentice knowledge of networking. CCNA certified professionals can install, configure, and operate LAN, WAN, and dial access services for small networks (100 nodes or fewer), including but not limited to use of these protocols: IP, IGRP, EIGRP, Serial, Frame Relay, IP RIP, VLANs, RIP, OSPF, Ethernet, Access Lists, and IPv6. The subject covers the Cisco Interworking Operating System, and Security Device Manager.

### PROJECT MANAGEMENT

IT professionals, whether in corporate departments or IT service organizations, increasingly operate outside traditional boundaries defined by technical skills. Successful project managers must grasp enterprise-wide business issues, consult effectively with users in a variety of functions, and work effectively in cross-functional project teams. The unit is a practical guide to successful project management. The unit deals with the key issues of project management and presents different solutions. The subject covers the 5 PMBOK processes:

- Initiating
- Planning
- Executing
- Controlling and Monitoring
- Closing

### VOICE OVER INTERNET PROTOCOL (VOIP)

VoIP is currently the fastest growing segment of the Information Technology and Telecommunications industry and is predicted to be a key driver in the expansion of business network infrastructure and network services. Information Technology professionals with an understanding of how to implement VoIP solutions are highly in demand and well placed for an exciting and rewarding career in this dynamic sector. This subject will cover the installation and configuration of an open source converged telecommunications platform, designed to allow different types of IP telephony hardware, middleware, and software to interface with each other consistently. Students will gain hands on experience on VoIP technology that provides multiple layers, managing both TDM and packet voice at lower layers while offering a highly flexible platform for PBX and telephony applications, and at the same time can provide a full-featured server platform for predictive dialing, custom IVR, remote and central office PBX, and video conferencing.

