Program Information Document

ICT40120 Certificate IV in Information Technology (Networking)

This qualification comes from a training package created by the Commonwealth Government for Information and Communications Technology (ICT) defining core and elective competency units. We've chosen specific elective units from the training package, based on input from industry experts, to address South Australia's workforce requirements.

This ICT40120 National Training Package qualification reflects the role of individuals who are job ready and competent in a wide range of information and communications technology (ICT) roles and apply a broad range of skills in varied work contexts, using problem solving skills and effective communication with others.

The skills required for these roles may include, but are not restricted to:

- Administer ICT Networks
- Support and troubleshoot ICT Networks and internet connectivity
- Resolve ICT problems
- Network support
- Select Cloud providers and provision cloud services
- Supporting information systems and software including Microsoft and Open-sourced Operating Systems (Linux)
- Database Security and Maintenance (MS SQL)

Employment Opportunities

- Network Manager (ICT)
- Service Desk Operator (ICT)
- Network Operations Technician
- Desktop Support Technician
- Network Administrator
- Service Desk Team Leader (ICT)

The recommended full-time study plan, see below, will require 12 months of study to complete this qualification.

Assumed Skills and Knowledge

There are no formal entry requirements for this course however, participants are best equipped to achieve the course outcomes if they have the following digital capabilities:

- Navigate and manage files and folders in a Windows environment, or similar.
- Connect to a network through Wi-Fi.
- Use a word processor such as MS Word to produce well-structured documents.
- Able to install and configure new software on a Windows computer
- Use a video conferencing tool such as Zoom or Teams.
- Recognise the purpose of basic components of computer hardware such as RAM, hard drive, network card, external drive.
- Troubleshoot computer issues that may arise in relation to the above
- Use a web Browser and the internet to research a topic.
- Prompt an AI tool, such as ChatGPT, Gemini etc.

If you need to develop yourself in many of these capabilities, we suggest you consider enrolling in our Certificate III in Information Technology.

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Information on the contents of the Certificate III can be found here:

Certificate III in Information Technology Program Information Document.

Incidentals

You will be required to provide your own access to the following hardware. This hardware costs approximately $300.00.

> 1TB SSD portable hard drive,
> webcam and
> headset with microphone.

Software

All software required to complete this course will be available for students at no additional cost.

Hardware

Access to computer hardware is provided the Adelaide city TAFE SA campus.

It is important to note that for students studying this course and not able to attend the Adelaide city it will be assumed that you have the necessary computer hardware to run the required resources. It is recommended that you have the following as a minimum.

A Windows based PC with the following:

> Intel i5 CPU (or equivalent AMD), (Intel i7, preferred)
> 16GB of RAM, (32GB, preferred)
> 1TB SSD

Note: Apple Mac hardware and operating systems are not compatible with some of the software required for this course and cannot be supported. We strongly advise against using this platform to study our courses.

Internet

To study away from a campus, you will be required to have internet access.

This qualification requires students to use virtual machines for learning activities and assessments. Students will be required to obtain these from either their local campus or from the Internet. Virtual machine file sizes can vary but are generally above 20GB in size. The time to download these virtual machines from the Internet may vary depending on your Internet connection speed.

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Required Competencies

Certificate IV in Information Technology (Networking)
National Code: ICT40120 TAFE SA Code: TP01247

This table shows the units of competency that you must have on your academic record to achieve this qualification. The National Training Package requires 20 units. The units are listed in the sequence that you should complete them. This is particularly important for part-time students. Standard study plans are provided below. The table also provides details of any assumed knowledge and skills for each unit. You must have these skills before attempting these units.

Unit Code	Unit Title	Core/Specialist Elective/Elective	Assumed knowledge & skills
ICTNWK420	Install and configure virtual machines	Specialist Elective	None
ICTSAS443	Support operating system users and troubleshoot applications	Listed Elective	None
ICTICT443	Work collaboratively in the ICT industry	Core	None
ICTICT426	Identify and evaluate emerging technologies and practices	Core	None
ICTPRG302	Apply introductory programming techniques	Core	None
ICTNWK424	Install and operate small enterprise branch networks	Specialist Elective	None
ICTTEN434	Install, configure and test internet protocol network	Specialist Elective	None
ICTNWK429	Install hardware to networks	Specialist Elective	None
ICTSAS432	Identify and resolve client ICT problems	Core	None
ICTCLD401	Configure cloud services	Listed Elective	None
ICTSAS518	Install and upgrade operating systems	Listed Elective	NWK420VMW
ICTNWK422	Install and manage servers	Specialist Elective	ICTNWK420 ICTNWK424, ICTNWK429 & ICTTEN434
ICTICT451	Comply with IP, ethics and privacy policies in ICT environments	Core	None
BSBCRT404	Apply advanced critical thinking to work processes	Core	None
BSBXCS404	Contribute to cyber security risk management	Core	None
ICTNWK540	Design, build and test network servers	Elective	ICTNWK420 ICTNWK424, ICTNWK429 & ICTTEN434

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ICTNWK421	Install, configure and test network security	Specialist Elective	ICTNWK420 ICTNWK422
ICTNWK423	Manage network and data integrity	Specialist Elective	ICTNWK420 ICTNWK422
ICTPRG438	Configure and maintain databases	Listed Elective	ICTNWK420 ICTNWK422
ICTNWK428	Create scripts for networking	Listed Elective	ICTNWK420 ICTNWK422

Study Plan for Full-Time Students (12 months)

The following tables shows the recommended full-time study plan for the Certificate IV in Information Technology (Networking). Each stage is one semester (or 6 months) in length. Codes in brackets are the IT Subject names which are described in the Subject table below.

Stage 1	
Term 1	**Term 2**
ICTNWK424 **ICTTEN434** **ICTNWK429** (NWK4C3CIN) (4)	
ICTNWK420 (NWK420VMW) (2)	**ICTCLD401** (CLD401ACF) (4)
ICTICT443* (ICT443) (2)	**ICTSAS518** (SAS518LXA) (4)
BSBXCS404* (XCS404) (2)	**ICTPRG302** (PRG302PYB) (2)
ICTSAS443 (SAS443WOS) (2)	**ICTSAS432** (SAS432) (2)
ICTICT426* **(ICT426) (2)**	
IT Practical (6)	**IT Practical (4)**
20 hours week	**20 hours /week**

Stage 2	
Term 1	**Term 2**
ICTNWK422 (NWK422ICW) (4)	**ICTNWK421** **ICTNWK423** (NWK4C2WSS) (4)
ICTICT451* (ICT451) (2)	**ICTNWK428** (NWK428PSS) (4)
BSBCRT404* (CRT404) (2)	**ICTPRG438** (PRG438MSS) (4)
ICTNWK540 (NWK540LXN) (4)	
IT Practical (8)	**IT Practical (8)**
20 hours week	**20 hours /week**

Please Note: This program structure is subject to change.

Legend:

* Competencies delivered online are marked with an asterisk

( ) The number in brackets after the subject is the number of hours per week that you would expect to attend class for that subject as a campus or virtual student.

IT Practical sessions provide support to complete subject activities and assessments.

NOTE: The study plan is for a full-time student with class attendance. This is usually between 16-20 hours a week of attendance. It is expected that an additional 12-15 hours would be required outside of class time to complete activities and assessments.

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Study Plan for Part-Time Students (24 months)

The following table shows the recommended study plan for studying the Certificate IV in Information Technology (Programming) as part-time (half-time). If a half-time plan does not meet your needs, you can study more or less subjects per term/semester, but you must follow the recommended sequence in the Required Competencies table above. Each stage is one semester (or 6 months) in length.

Stage 1	
Term 1	**Term 2**
ICTNWK420 NWK420VMW (2)	**ICTICT443*** ICT443 (2)
BSBCRT404* (CRT404) (2)	**ICTICT426*** (ICT426) (2)
ICTSAS443 SAS443WOS (2)	**ICTPRG302** (PRG302PYB) (2)
IT Practical (4)	**IT Practical (4)**
10 hours / week	**10 hours / week**

Stage 2	
Term 1	**Term 2**
ICTNWK424 **ICTTEN434** **ICTNWK429** (NWK4C3CIN) (4)	
ICTSAS432 (SAS432) (2)	**ICTCLD401** (CLD401ACF) (4)
IT Practical (4)	**IT Practical (2)**
10 hours / week	**10 hours / week**

Stage 3	
Term 1	**Term 2**
ICTNWK422 (NWK422ICW) (4)	**ICTNWK540** (NWK540LXN) (4)
ICTSAS518 (SAS518LXA) (4)	**BSBXCS404*** (XCS404) (2)
IT Practical (2)	**IT Practical (4)**
10 hours / week	**10 hours / week**

Stage 4	
Term 1	**Term 2**
ICTNWK421 **ICTNWK423** (NWK4C2WSS) (4)	**ICTPRG438** (PRG438MSS) (4)
ICTNWK428 (NWK428PSS) (4)	**ICTICT451*** (ICT451) (2)
IT Practical (2)	**IT Practical (4)**
10 hours / week	**10 hours / week**

Legend:

* Competencies delivered online are marked with an asterisk

( ) The number in brackets after the subject is the number of hours per week that you would expect to attend class for that subject as a campus or virtual student.

NOTE: The study plan is for a part-time student studying a half-time load. This is approximately 10 hours a week of class time. It is expected that an additional 6-10 hours would be required outside of class time to complete activities and assessments.

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IT Studies Subjects

TAFE SA IT Studies uses subject codes to indicate the context that has been chosen for the unit, guided by industry needs in South Australia. For example, **NWK420VMW** indicates that the content for delivery of unit **ICTNWK420** will include coverage of VMWare (**VMW**).

The table below provided information on the context for each unit and provides the subject code that is used. If a subject contains more than one unit delivery and assessment will be done holistically so you will be awarded the same result for all units assessed in that subject that you have enrolled in. Your final official results will refer to the units.

Unit Code	IT Studies subject code	Description
ICTNWK420	NWK420VMW	This unit describes the skills and knowledge required to select and implement virtualisation solutions to meet organisational needs in an information and communications technology (ICT) environment. This course will primarily use the VMware Workstation virtualisation software. This subject teaches the underpinning skills required by most of the subjects that teach hands on practical skills It applies to individuals who work in the network area of organisations and are responsible for the virtualisation of desktop and server operating systems.
ICTSAS443	SAS443WOS	This unit describes the skills and knowledge required to support users who run operating systems (OS) in a corporate or home environment and to troubleshoot applications on a range of Information and Communications Technology (ICT) devices. It applies to individuals who provide frontline support to users and apply technical and specialised knowledge to fault finding and problem-solving.
ICTICT443	ICT443	This unit describes the skills required to work collaboratively in virtual Information and Communications (ICT) team environments to achieve organisational objectives. It includes contributing to performance and capability within teams, participating in team activities, exchanging knowledge and skills and providing support to team members. It applies to all individuals who work in teams that utilise multiple technologies to complete a collective task.
ICTICT426	ICT426	This unit describes the skills and knowledge required to identify emerging technologies and practices in the ICT sector and evaluate their potential impact on organisational practices. It applies to individuals who work across a wide range of information technology (IT) areas, including technical support, network administration, web technologies, software applications and digital media technologies.
ICTPRG302	PRG302PYB	This unit describes the skills and knowledge required to create simple applications through introductory programming techniques. This unit teaches an introductory level of Python programming. It applies to those who have responsibility for creating applications and includes applying language syntax, control structures to create code, using programming standards, testing and debugging.
ICTNWK424	NWK4C3CIN	This unit describes the skills and knowledge required to utilise networking fundamentals, including wide area network (WAN) technologies, basic security, route and switch operations as well as to configure simple networks. This course is closely aligned with the Cisco Introduction to Networking course which is part of the CCNA certification exam.

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		It applies to individuals involved in network support positions with the Information Communications Technologies (ICT) skills required to use tools, equipment, software and protocols to install and operate, a small enterprise branch network.
ICTTEN434	NWK4C3CIN	This unit describes the skills and knowledge required to identify required network elements according to specifications, install them for interoperability within the network, apply network topologies, protocols and security issues, and troubleshoot when required. This course is closely aligned with the Cisco Introduction to Networking course which is part of the CCNA certification exam. It applies to individuals who are involved in the installation, maintenance and upgrade of Information and Communications Technology (ICT) networks in telecommunications or Information Technology Networking provisioning companies.
ICTNWK429	NWK4C3CIN	This unit describes the skills and knowledge required to plan, manage and install new hardware components in a network. This course is closely aligned with the Cisco Introduction to Networking course which is part of the CCNA certification exam. It applies to individuals involved in technical Information and Communications Technology (ICT) support roles, including network administrators who support network hardware in a peer-to-peer or client-server networked environment.
ICTSAS432	SAS432	This unit describes the skills and knowledge required to identify, record, prioritise and resolve client Information and Communications Technology (ICT) support activities and escalate as required. It applies to experienced individuals who use specialised and technical knowledge to take responsibility for providing client-based ICT support to end users in an office or working environment.
ICTCLD401	CLD401ACF	This unit describes the skills and knowledge required to configure core cloud services including compute, storage, databases and autoscaling according to business needs and workload. This course is closely aligned with the AWS Cloud Foundation certification. The student will use the AWS cloud platform for their practical tasks. The unit applies to cloud computing architects, developers and cloud engineers utilising cloud services and those engaged in deploying cloud computing solutions for a business.
BSBCRT404	CRT404	This unit describes the skills and knowledge required to use advanced-level critical thinking skills in a professional context. This includes using methods of analysis, synthesis and evaluation. This unit applies to individuals who evaluate processes, products and services that may be proposed or already existing. This unit applies to individuals who are typically responsible for developing work processes, products and services that may be proposed or already existing.
ICTSAS518	SAS518LXA	This unit describes the skills and knowledge required to maintain, install new and upgrade existing operating systems (OS) in a medium to large organisation. This subject teaches an introductory level of Linux OS. It applies to individuals who apply technical and specialised knowledge to undertake complex support operations.
ICTNWK422	NWK422ICW	This unit describes the skills and knowledge required to install and manage a server. It includes the ability to conduct initial configuration and testing, administration, software distribution and updates, profiling and troubleshooting. This course is an

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		introductory course for the administration of MS Windows Server and its associated services. It applies to individuals with Information and Communications Technology (ICT) skills, involved in network management, server administration and similar roles.
ICTNWK540	NWK540LXN	his unit describes the skills and knowledge required to design, install and test servers in complex network environments. This course is the second-level course for the administration of Linux servers and their associated networking services. It applies to individuals who are employed in network or systems engineering roles or similar and are required to design and build network servers in a complex computing environment of medium-to-large organisations.
ICTPRG438	PRG438MSS	This unit describes the skills and knowledge required to install a database, manage data, data access and data security and improve database performance. This subject is taught using the MS SQL server hosted on MS Windows Server. It applies to those who are responsible for the maintenance and coordination of database operations. They usually work in an organisation providing daily services as database administrators, database developers, database coordinators, or application developers.
ICTNWK428	NWK428PSS	This unit describes the skills and knowledge required to automate Active Directory and Windows services with PowerShell scripts. This subject is taught using Active Directory and services hosted on MS Windows Server. It applies to those who are responsible for the maintenance and coordination of database operations. They usually work in an organisation providing daily services as database administrators, database developers, database coordinators, or application developers.