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ANZSCO Code Information

The ANZSCO code information is to assist applicants in nominating an ICT occupation and contains example of ICT units and employment duties for each occupation.

Medium and Long-term Strategic Skills List (MLTSSL)

Medium and Long-term Strategic Skills List (MLTSSL) ANZSCO codes assessed by the ACS.

Please Note: Temporary Graduate 485 skills assessments applicants should only apply for ANZSCO codes listed in the Skilled Occupation List above.

Combined List of Eligible Skilled Occupations

[Combined list of eligible skilled occupations](#) ANZSCO codes assessed by the ACS.

261311 - Analyst Programmer

Analyses user needs, produces requirements documentation and system plans, and encodes, tests, debugs, maintains and documents programs and applications.

Description of Employment Duties:

- researching, consulting, analysing and evaluating system program needs
- identifying technology limitations and deficiencies in existing systems and associated processes, procedures and methods
- testing, debugging, diagnosing and correcting errors and faults in an applications programming language within established testing protocols, guidelines and quality standards to ensure programs and applications perform to specification
- writing and maintaining program code to meet system requirements, system designs and technical specifications in accordance with quality accredited standards
- writing, updating and maintaining technical program, end user documentation and operational procedures
- providing advice, guidance and expertise in developing proposals and strategies for software design activities such as financial evaluation and costing for recommending software purchases and upgrades

Description of Closely Related Core ICT Units:

- Algorithm design and development
- Compilers - *(Compiler Construction, Compiler Theory)*
- Data structures
- Formal languages - *(Formal Methods, Functional Programming)*
- Human Computer Interaction
- Object Oriented Programming
- Operating systems - *(Unix, Linux, Xenix, Network OS)*
- Programming - *(C, C++, Objective C, Visual C, Basic, Visual Basic, Java, Assembler, Cobol, Pascal, PL/1, Fortran, PHP, Pearl, AS3, FoxPro, and similar)*
- Software Engineering
- Systems Programming
- Testing strategies and methods - *(Software Testing)*

Description of Additional Closely Related ICT Units:

- Artificial intelligence
- Automata theory
- Business Information Systems
- Computer Science
- Critical Path Method
- Database design, Database implementation
- Database Management Systems - *(Relational Database, Object Oriented Database, RDBMS)*
- Expert Systems
- File Processing
- Information Systems
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Introduction to Information Systems
- Management Information Systems
- Object Oriented Systems Analysis and Design
- Object Oriented technologies
- Project Management
- Quality management - *(Quality Assurance, Software Quality)*
- Requirements gathering
- Software validation - *(Software Testing)*
- Structure of languages
- Systems Analysis and Design
- Telematics
- User Requirements Definition
- Web Engineering - *(Web Design, Internet Engineering)*

135111 - Chief Information Officer

Plans, organises, directs, controls and coordinates the ICT strategies, plans and operations of an organisation to ensure the ICT infrastructure supports the organisation's overall operations and priorities.

Description of Employment Duties:
- analysing information needs and specifying technology to meet those needs
- formulating and directing information and communication technology (ICT) strategies, policies and plans
- directing the selection and installation of ICT resources and the provision of user training
- directing ICT operations and setting priorities between system developments, maintenance and operations
- overseeing the security of ICT systems

Description of Closely Related Core ICT Units:
- Business Information Systems
- Business Intelligence
- Business Process Reengineering
- Business System planning
- Critical Path Method
- Enterprise Architecture - *(Enterprise Resource Management, Emerging Technologies)*
- ICT Management
- ICT Strategy
- Information System Risk Management
- Information System Security
- Information Systems Management
- Management Information Systems
- Project Management
- Project Planning
- System Integration
- Systems Acquisition – (eg: Resource Management)

Description of Additional Closely Related ICT Units:
- Algorithm design *(Algorithm development)*
- Artificial intelligence
- Automata theory
- Computer Science
- Database design
- Database implementation
- Database Management Systems - *(Relational Database, Object Oriented Database)*
- Expert Systems
- File Processing
- Human Computer Interaction
- Information Systems
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Introduction to Information Systems
- Programming - *(C, C++, Objective C, Visual C, Basic, Visual Basic, Java, Assembler, Cobol, Pascal, PL/1, Fortran, PHP, Pearl, AS3, FoxPro, and similar)*
- Quality management - *(Quality Assurance, Software Quality)*
- Software Engineering
- Software validation - *(Software Testing, Testing strategies and methods)*
- Web Engineering - *(Web Design, Internet Engineering)*

263111 - Computer Network and Systems Engineer

Plans, develops, deploys, tests and optimizes network and system services, taking responsibility for configuration management and overall operational readiness of network systems, especially environments with multiple operating systems and configurations, and provides troubleshooting and fault-finding services for network problems.

Description of Employment Duties:
- analyzing, developing, interpreting and evaluating complex system design and architecture specifications, data models and diagrams in the development, configuration and integration of computer systems
- researching, analyzing, evaluating and monitoring network infrastructure to ensure networks are configured to operate at optimal performance
- assessing and recommending improvements to network operations and integrated hardware, software, communications and operating systems
- providing specialist skills in supporting and troubleshooting network problems and emergencies
- installing, configuring, testing, maintaining and administering new and upgraded networks, software database applications, servers and workstations
- providing network programming in support of specific business needs and requirements
- preparing and maintaining procedures and documentation for network inventory, and recording diagnosis and resolution of network faults, enhancements and modifications to networks, and maintenance instructions
- monitoring network traffic, and activity, capacity and usage to ensure continued integrity and optimal network performance

Description of Closely Related Core ICT Units:
- Computer Communication
- Computer Network Design
- Computer Network management
- Computer Network programming
- Computer Network protocols
- Data communications - *(WAN, LAN)*
- Distributed Computing
- Mobile technologies
- Operating systems - *(Unix, Linux, Xenix, Network OS)*
- Systems Software
- Wireless technologies - *(Wireless Communication, Microwave Communication)*

Description of Additional Closely Related ICT Units:
- Assembler Languages - *(Assembler Programming)*
- Client / Server related hardware and software
- Client / Server Architecture
- Communications Engineering
- Computer Logic Design
- Computer organization
- Digital and signal processing
- Digital circuits - *(VLSI Design, Integrated Circuit Design)*
- Digital technology
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Microprocessors
- Microwave technology
- Network Component technologies
- Network security
- Optical communication technology
- Peripherals and Interfacing
- Project Management
- Satellite communications

262111 - Database Administrator

Plans, develops, configures, maintains and supports an organisation's database management system in accordance with user requirements ensuring optimal database integrity, security, backup, reliability and performance.

Description of Employment Duties:
- designing and maintaining database architecture, data structures, tables, dictionaries and naming conventions to ensure the accuracy and completeness of all data master files
- performing the operational establishment and preventive maintenance of backups, recovery procedures, and enforcing security and integrity controls
- implementing and administering database documentation, guidelines, policies and procedures
- testing database systems and upgrades, such as debugging, tracking, reproduction, logging and resolving all identified problems, according to approved quality testing scripts, procedures and processes
- accepting responsibility for the processes, procedures and operational management associated with system security and disaster recovery planning
- liaising with security vendors, suppliers, service providers and external resources; analyzing, recommending, installing and maintaining software security applications; and monitoring contractual obligations, performance delivery and service level agreements
- troubleshooting and providing service support in diagnosing, resolving and repairing server-related hardware and software malfunctions, encompassing workstations and communication infrastructure
- preparing and maintaining documentation, policies and instructions, and recording and detailing operational procedures and system logs
- ensuring that the design of computer sites allows all components to fit together and work properly, and monitoring and adjusting the performance of networks
- continually surveying the current computer site to determine future network needs and making recommendations for enhancements in the implementation of future servers and networks

Description of Closely Related Core ICT Units:
- Data modeling
- Data structures
- Database administration
- Database design
- Database implementation
- Database languages - *(e.g. SQL)*
- Database Management Systems - *(Relational Database, Object Oriented Database, RDBMS)*
- Entity relationship modeling
- Operating systems - *(Unix, Linux, Xenix, Network OS)*

Description of Additional Closely Related ICT Units:
- Backup and Recovery
- Client Server Technology
- Critical Path Method
- Data policy
- Data security
- Distributed Systems
- File Processing
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Project Management
- Quality management - *(Quality Assurance, Software Quality)*
- Testing strategies and methods

261312 - Developer Programmer
Interprets specifications, technical designs and flow charts, builds, maintains and modifies the code for software applications, constructs technical specifications from a business functional model, and tests and writes technical documentation.

Description of Employment Duties:
- researching, consulting, analyzing and evaluating system program needs
- identifying technology limitations and deficiencies in existing systems and associated processes, procedures and methods
- testing, debugging, diagnosing and correcting errors and faults in an applications programming language within established testing protocols, guidelines and quality standards to ensure programs and applications perform to specification
- writing and maintaining program code to meet system requirements, system designs and technical specifications in accordance with quality accredited standards
- writing, updating and maintaining technical program, end user documentation and operational procedures
- providing advice, guidance and expertise in developing proposals and strategies for software design activities such as financial evaluation and costing for recommending software purchases and upgrades

Description of Closely Related Core ICT Units:
- Algorithm design and development
- Compilers - *(Compiler Construction, Compiler Theory)*
- Data structures
- Formal languages - *(Formal Methods, Functional Programming)*
- Human Computer Interaction
- Object Oriented Programming
- Operating systems - *(Unix, Linux, Xenix, Network OS)*
- Programming - *(C, C++, Objective C, Visual C, Basic, Visual Basic, Java, Assembler, Cobol, Pascal, PL/1, Fortran, PHP, Pearl, AS3, FoxPro, and similar)*
- Software Engineering
- Systems Programming
- Testing strategies and methods - *(Software Testing)*

Description of Additional Closely Related ICT Units:
- Artificial intelligence
- Automata theory
- Business Information Systems
- Computer Science
- Critical Path Method
- Database design, Database implementation
- Database Management Systems - *(Relational Database, Object Oriented Database, RDBMS)*
- Expert Systems
- File Processing
- Information Systems
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Introduction to Information Systems
- Management Information Systems
- Object Oriented Systems Analysis and Design
- Object Oriented technologies
- Project Management
- Quality management - *(Quality Assurance, Software Quality)*
- Requirements gathering
- Software validation - *(Software Testing)*
- Structure of languages
- Systems Analysis and Design
- Telematics
- User Requirements Definition
- Web Engineering - *(Web Design, Internet Engineering)*

261111 - ICT Business Analysts

Identifies and communicates with users to formulate and produce a requirements specification to create system and software solutions.

Description of Employment Duties:
- working with users to formulate and document business requirements
- identifying, investigating, and analyzing business processes, procedures and work practices
- identifying and evaluating inefficiencies and recommending optimal business practices, and system functionality and behavior
- using project management methodologies, principles and techniques to develop project plans and to cost, resource and manage projects
- taking responsibility for deploying functional solutions, such as creating, adopting and implementing system test plans, which ensure acceptable quality and integrity of the system
- creating user and training documentation, and conducting formal training classes
- developing functional specifications for use by system developers
- using data and process modeling techniques to create clear system specifications for the design and development of system software
- acting as a central reference and information source, providing guidance and assistance in the system project decision making process

Description of Closely Related Core ICT Units:
- Business Information Systems
- Business Intelligence
- Business Process Reengineering
- Business System planning
- Enterprise architecture - *(Enterprise Resource Management, Emerging Technologies)*
- Expert Systems
- Information System Management
- Information Systems, Management Information Systems
- Object Oriented Systems Analysis and Design
- Requirements gathering
- Software Engineering
- Systems Analysis and Design
- System Development
- System Integration
- System Modeling
- UML
- User Requirements Definition

Description of Additional Closely Related ICT Units:
- Algorithm design *(Algorithm development)*
- Artificial intelligence
- Automata theory
- Computer Science
- Critical Path Method
- Database design, Database implementation
- Database Management Systems - *(Relational Database, Object Oriented Database, RDBMS)*
- File Processing
- Human Computer Interaction
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Introduction to Information Systems
- Programming - *(C, C++, Objective C, Visual C, Basic, Visual Basic, Java, Assembler, Cobol, Pascal, PL/1, Fortran, PHP, Pearl, AS3, FoxPro, and similar)*
- Project Management
- Quality management - *(Quality Assurance, Software Quality)*
- Software validation - *(Software Testing, Testing strategies and methods)*
- Web Engineering - *(Web Design, Internet Engineering)*

135199 - ICT Managers NEC

Plan, organise, direct, control and coordinate the acquisition, development, maintenance and use of computer and telecommunication systems within organisations.

Description of Employment Duties:
- analyzing information needs and specifying technology to meet those needs
- formulating and directing information and communication technology (ICT) strategies, policies and plans
- directing the selection and installation of ICT resources and the provision of user training
- directing ICT operations and setting priorities between system developments, maintenance and operations
- overseeing the security of ICT systems

Description of Closely Related Core ICT Units:
- Business Information Systems
- Business Intelligence
- Business Process Reengineering
- Business System planning
- Critical Path Method
- Enterprise Architecture - *(Enterprise Resource Management, Emerging Technologies)*
- ICT Management
- ICT Strategy
- Information System Risk Management
- Information System Security
- Information Systems Management
- Management Information Systems
- Project Management
- Project Planning
- System Integration
- Systems Acquisition – (eg: Resource Management)

Description of Additional Closely Related ICT Units:
- Algorithm design *(Algorithm development)*
- Artificial intelligence
- Automata theory
- Computer Science
- Database design
- Database implementation
- Database Management Systems - *(Relational Database, Object Oriented Database)*
- Expert Systems
- File Processing
- Human Computer Interaction
- Information Systems
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Introduction to Information Systems
- Programming - *(C, C++, Objective C, Visual C, Basic, Visual Basic, Java, Assembler, Cobol, Pascal, PL/1, Fortran, PHP, Pearl, AS3, FoxPro, and similar)*
- Quality management - *(Quality Assurance, Software Quality)*
- Software Engineering
- Software validation - *(Software Testing, Testing strategies and methods)*
- Web Engineering - *(Web Design, Internet Engineering)*

135112 - ICT Project Manager

Plans, organises, directs, controls and coordinates quality accredited ICT projects. Accountable for day-to-day operations of resourcing, scheduling, prioritization and task coordination, and meeting project milestones, objectives and deliverables within agreed timeframes and budgets.

Description of Employment Duties:
- analyzing information needs and specifying technology to meet those needs
- formulating and directing information and communication technology (ICT) strategies, policies and plans
- directing the selection and installation of ICT resources and the provision of user training
- directing ICT operations and setting priorities between system developments, maintenance and operations
- overseeing the security of ICT systems

Description of Closely Related Core ICT Units:
- Business Information Systems
- Business Intelligence
- Business Process Reengineering
- Business System planning
- Critical Path Method
- Enterprise Architecture - *(Enterprise Resource Management, Emerging Technologies)*
- ICT Management
- ICT Strategy
- Information System Risk Management
- Information System Security
- Information Systems Management
- Management Information Systems
- Project Management
- Project Planning
- System Integration
- Systems Acquisition – (eg: Resource Management)

Description of Additional Closely Related ICT Units:
- Algorithm design *(Algorithm development)*
- Artificial intelligence
- Automata theory
- Computer Science
- Database design
- Database implementation
- Database Management Systems - *(Relational Database, Object Oriented Database)*
- Expert Systems
- File Processing
- Human Computer Interaction
- Information Systems
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Introduction to Information Systems
- Programming - *(C, C++, Objective C, Visual C, Basic, Visual Basic, Java, Assembler, Cobol, Pascal, PL/1, Fortran, PHP, Pearl, AS3, FoxPro, and similar)*
- Quality management - *(Quality Assurance, Software Quality)*
- Software Engineering
- Software validation - *(Software Testing, Testing strategies and methods)*
- Web Engineering - *(Web Design, Internet Engineering)*

263211 - ICT Quality Assurance Engineer

Creates, maintains and manages technical quality assurance processes and procedures to assess efficiency, validity, value and functional performance of computer systems and environments, and audits systems to ensure compliance with, and adherence to, accredited internal and external industry quality standards and regulations. May supervise the work of ICT quality assurance teams.

Description of Employment Duties:
- scheduling and conducting quality audit inspections, and analyzing and reviewing systems, data and documentation
- identifying variations and potential high risk areas in securing adherence to standards and procedures
- recommending corrective action plans and improvements in the resolution of non-compliance with standards detected through monitoring and auditing of processes and procedures
- communicating, educating and liaising with users and management to ensure awareness and adherence to standards, procedures and quality control issues and activities
- assisting in troubleshooting, diagnosing, testing and resolving system problems and issues
- developing, conducting and providing technical guidance and training in application software and operational procedures
- analyzing, evaluating and diagnosing technical problems and issues such as installation, maintenance, repair, upgrade and configuration and troubleshooting of desktops, software, hardware, printers, Internet, email, databases, operating systems and security systems
- testing, identifying and diagnosing functionality errors and faults in systems, and programming code within established testing protocols, guidelines and quality standards to ensure systems perform to specification
- performing organizational systems architecture reviews and assessments, and recommending current and future hardware and software strategies and directions
- creating and reviewing technical documentation such as procedural, instructional and operational guides and manuals, technical reports and specifications and maintenance inventory systems

Description of Closely Related Core ICT Units:
- Business Process Reengineering
- Computer Audit
- ICT Security
- Operating systems - *(Unix, Linux, Xenix, Network OS)*
- Quality management - *(Quality Assurance, Software Quality)*
- Risk Management
- Software Engineering
- Software validation - *(Software Testing)*
- Testing strategies and methods

Description of Additional Closely Related ICT Units:
- Computer forensics
- Computer Science
- Data communications - *(WAN, LAN)*
- Database design
- Database implementation
- Database Management Systems - *(Relational Database, Object Oriented Database)*
- Digital communication
- Information security - *(Data security)*
- Internet forensics
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Introduction to Information Systems
- Network architecture
- Programming - *(C, C++, Objective C, Visual C, Basic, Visual Basic, Java, Assembler, Cobol, Pascal, PL/1, Fortran, PHP, Pearl, AS3, FoxPro, and similar)*
- Software architecture

262112 - ICT Security Specialist

Establishes, manages and administers an organisation's ICT security policy and procedures to ensure preventive and recovery strategies are in place, and minimize the risk of internal and external security threats.

Description of Employment Duties:
- designing and maintaining database architecture, data structures, tables, dictionaries and naming conventions to ensure the accuracy and completeness of all data master files
- performing the operational establishment and preventive maintenance of backups, recovery procedures, and enforcing security and integrity controls
- implementing and administering database documentation, guidelines, policies and procedures
- testing database systems and upgrades, such as debugging, tracking, reproduction, logging and resolving all identified problems, according to approved quality testing scripts, procedures and processes
- accepting responsibility for the processes, procedures and operational management associated with system security and disaster recovery planning
- liaising with security vendors, suppliers, service providers and external resources; analysing, recommending, installing and maintaining software security applications; and monitoring contractual obligations, performance delivery and service level agreements
- troubleshooting and providing service support in diagnosing, resolving and repairing server-related hardware and software malfunctions, encompassing workstations and communication infrastructure
- preparing and maintaining documentation, policies and instructions, and recording and detailing operational procedures and system logs
- ensuring that the design of computer sites allows all components to fit together and work properly, and monitoring and adjusting the performance of networks
- continually surveying the current computer site to determine future network needs and making recommendations for enhancements in the implementation of future servers and networks

Description of Closely Related Core ICT Units:
- Computer forensics
- Data Encryption
- Database design
- Database implementation
- Database Management Systems - *(Relational Database, Object Oriented Database, RDBMS)*
- Information security
- Information Systems security
- Internet and the Web
- Internet forensics
- Network security
- Operating systems - *(Unix, Linux, Xenix, Network OS)*
- *Systems Software*
- Web security

Description of Additional Closely Related ICT Units:
- Backup and Recovery
- Client Server Technology
- Computer networks
- Critical Path Method
- Data Communications
- Data policy
- Data and information security
- Data structures
- Distributed Systems
- File Processing
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Project Management
- Quality management - *(Quality Assurance, Software Quality)*
- Testing strategies and methods

263299 - ICT Support and Test Engineer NEC

ICT Support and Test Engineers develop procedures and strategies to support, create, maintain and manage technical quality assurance processes and guidelines and systems infrastructure, investigate, analyse and resolve system problems and performance issues, and test the behavior, functionality and integrity of systems.

Description of Employment Duties:

- scheduling and conducting quality audit inspections, and analyzing and reviewing systems, data and documentation
- identifying variations and potential high risk areas in securing adherence to standards and procedures
- recommending corrective action plans and improvements in the resolution of non-compliance with standards detected through monitoring and auditing of processes and procedures
- communicating, educating and liaising with users and management to ensure awareness and adherence to standards, procedures and quality control issues and activities
- assisting in troubleshooting, diagnosing, testing and resolving system problems and issues
- developing, conducting and providing technical guidance and training in application software and operational procedures
- analyzing, evaluating and diagnosing technical problems and issues such as installation, maintenance, repair, upgrade and configuration and troubleshooting of desktops, software, hardware, printers, Internet, email, databases, operating systems and security systems
- testing, identifying and diagnosing functionality errors and faults in systems, and programming code within established testing protocols, guidelines and quality standards to ensure systems perform to specification
- performing organizational systems architecture reviews and assessments, and recommending current and future hardware and software strategies and directions
- creating and reviewing technical documentation such as procedural, instructional and operational guides and manuals, technical reports and specifications and maintenance inventory systems

Description of Closely Related Core ICT Units:

- Business Process Reengineering
- Computer Audit
- Computer Organisation
- ICT Security
- Operating systems - *(Unix, Linux, Xenix, Network OS)*
- Quality management - *(Quality Assurance, Software Quality)*
- Risk Management
- Software Engineering
- System Software
- Software validation - *(Software Testing)*
- Testing strategies and methods

Description of Additional Closely Related ICT Units:

- Computer forensics
- Computer Science
- Data communications - *(WAN, LAN)*
- Database design
- Database implementation
- Database Management Systems - *(Relational Database, Object Oriented Database)*
- Digital communication
- Information security - *(Data security)*
- Internet forensics
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Introduction to Information Systems
- Network architecture
- Programming - *(C, C++, Objective C, Visual C, Basic, Visual Basic, Java, Assembler, Cobol, Pascal, PL/1, Fortran, PHP, Pearl, AS3, FoxPro, and similar)*
- Software architecture

263212 - ICT Support Engineer

Develops support procedures and strategies for systems, networks, operating systems and applications development, solves problems and provides technical expertise and direction in support of system infrastructure and process improvements, and diagnoses and resolves complex system problems.

Description of Employment Duties:

- scheduling and conducting quality audit inspections, and analyzing and reviewing systems, data and documentation
- identifying variations and potential high risk areas in securing adherence to standards and procedures
- recommending corrective action plans and improvements in the resolution of non-compliance with standards detected through monitoring and auditing of processes and procedures
- communicating, educating and liaising with users and management to ensure awareness and adherence to standards, procedures and quality control issues and activities
- assisting in troubleshooting, diagnosing, testing and resolving system problems and issues
- developing, conducting and providing technical guidance and training in application software and operational procedures
- analyzing, evaluating and diagnosing technical problems and issues such as installation, maintenance, repair, upgrade and configuration and troubleshooting of desktops, software, hardware, printers, Internet, email, databases, operating systems and security systems
- testing, identifying and diagnosing functionality errors and faults in systems, and programming code within established testing protocols, guidelines and quality standards to ensure systems perform to specification
- performing organizational systems architecture reviews and assessments, and recommending current and future hardware and software strategies and directions
- creating and reviewing technical documentation such as procedural, instructional and operational guides and manuals, technical reports and specifications and maintenance inventory systems

Description of Closely Related Core ICT Units:

- Business Process Reengineering
- Computer Audit
- Computer Organisation
- ICT Security
- Operating systems - *(Unix, Linux, Xenix, Network OS)*
- Quality management - *(Quality Assurance, Software Quality)*
- Risk Management
- Software Engineering
- System Software
- Software validation - *(Software Testing)*
- Testing strategies and methods

Description of Additional Closely Related ICT Units:

- Computer forensics
- Computer Science
- Data communications - *(WAN, LAN)*
- Database design
- Database implementation
- Database Management Systems - *(Relational Database, Object Oriented Database)*
- Digital communication
- Information security - *(Data security)*
- Internet forensics
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Introduction to Information Systems
- Network architecture
- Programming - *(C, C++, Objective C, Visual C, Basic, Visual Basic, Java, Assembler, Cobol, Pascal, PL/1, Fortran, PHP, Pearl, AS3, FoxPro, and similar)*
- Software architecture

263213 - ICT Systems Test Engineer

Specifies, develops and writes test plans and test scripts, produces test cases, carries out regression testing, and uses automated test software applications to test the behaviour, functionality and integrity of systems, and documents the results of tests in defect reports and related documentation.

Description of Employment Duties:
- scheduling and conducting quality audit inspections, and analyzing and reviewing systems, data and documentation
- identifying variations and potential high risk areas in securing adherence to standards and procedures
- recommending corrective action plans and improvements in the resolution of non-compliance with standards detected through monitoring and auditing of processes and procedures
- communicating, educating and liaising with users and management to ensure awareness and adherence to standards, procedures and quality control issues and activities
- assisting in troubleshooting, diagnosing, testing and resolving system problems and issues
- developing, conducting and providing technical guidance and training in application software and operational procedures
- analyzing, evaluating and diagnosing technical problems and issues such as installation, maintenance, repair, upgrade and configuration and troubleshooting of desktops, software, hardware, printers, Internet, email, databases, operating systems and security systems
- testing, identifying and diagnosing functionality errors and faults in systems, and programming code within established testing protocols, guidelines and quality standards to ensure systems perform to specification
- performing organizational systems architecture reviews and assessments, and recommending current and future hardware and software strategies and directions
- creating and reviewing technical documentation such as procedural, instructional and operational guides and manuals, technical reports and specifications and maintenance inventory systems

Description of Closely Related Core ICT Units:
- Business Process Reengineering
- Computer Audit
- Computer Organisation
- ICT Security
- Operating systems - *(Unix, Linux, Xenix, Network OS)*
- Quality management - *(Quality Assurance, Software Quality)*
- Risk Management
- Software Engineering
- System Software
- Software validation - *(Software Testing)*
- Testing strategies and methods

Description of Additional Closely Related ICT Units:
- Computer forensics
- Computer Science
- Data communications - *(WAN, LAN)*
- Database design
- Database implementation
- Database Management Systems - *(Relational Database, Object Oriented Database)*
- Digital communication
- Information security - *(Data security)*
- Internet forensics
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Introduction to Information Systems
- Network architecture
- Programming - *(C, C++, Objective C, Visual C, Basic, Visual Basic, Java, Assembler, Cobol, Pascal, PL/1, Fortran, PHP, Pearl, AS3, FoxPro, and similar)*
- Software architecture

223211 – ICT Trainer

ICT Trainers analyse and evaluate information-based system training needs and objectives, and develop, schedule and conduct ICT-based system training programs and courses.

Description of Employment Duties:
- identifying technical training needs and requirements of individuals and organizations
- setting human resource development objectives and evaluating learning outcomes
- preparing and developing instructional training material and aids such as handbooks, visual aids, online tutorials, demonstration models, and supporting training reference documentation
- designing, coordinating, scheduling and conducting ICT training and development programs that can be delivered in the form of individual and group instruction, and facilitating workshops, meetings, demonstrations and conferences
- liaising with external training providers to arrange delivery of specific training and development programs
- promoting internal and external training and development, and evaluating these promotional activities
- monitoring and performing ongoing evaluation and assessment of training quality and effectiveness, and reviewing and modifying training objectives, methods and course deliverables
- gathering, investigating and researching background materials to gain a full understanding of the ICT subject matter and systems
- keeping up-to-date with new product version releases, advances in programming languages, application development software, and general information technology trends
- writing end user products and materials such as user training, tutorial and instruction manuals, online help, and operating and maintenance instructions

Description of Closely Related Core ICT Units:
- Advanced level subjects in ICT

Description of Additional Closely Related ICT Units:
- Introductory level subjects in ICT
- Online training authoring systems
- Theory of education

261211 - Multimedia Specialist

Multimedia Specialists create computer animation, audio, video and graphic image files for multimedia presentations, games, motion pictures, CD-ROMs, information kiosks and the web, and plan, produce and maintain websites and web applications using web programming, scripting, authoring, content management and file transfer software.

Alternative Titles: Electronic Game Developer, Multimedia Developer, Multimedia Programmer

Description of Employment Duties:
- analyzing, designing and developing Internet sites applying a mixture of artistry and creativity with software programming and scripting languages and interfacing with operating environments
- designing and developing digital animations, imaging, presentations, games, audio and video clips, and Internet applications using multimedia software, tools and utilities, interactive graphics and programming languages
- communicating with network specialists regarding web-related issues, such as security and hosting websites, to control and enforce Internet and web server security, space allocation, user access, business continuity, website backup and disaster recovery planning
- designing, developing and integrating computer code with other specialized inputs, such as image files, audio files and scripting languages, to produce, maintain and support websites
- assisting in analyzing, specifying and developing Internet strategies, web-based methodologies and development plans

Description of Closely Related Core ICT Units:
- Computer Graphics & Animation - *(2D Computer graphics, 3D Computer graphics, 2D Animation, 3D Animation)*
- Human Computer Interaction - *(Interface Design)*
- Image and media data manipulation - *(Developing Interactive Media, Multimedia Authoring, Games Design)*
- Operating Systems *(e.g. iOS, Android, Linux, Unix)*
- Programming *(e.g. Internet Programming, C++, Java, Objective C, AS3, Games Programming)*
- Software Engineering
- Web Systems Design - *(Interactive System Design)*
- WWW and the Internet – *(Web Technologies, Web Engineering, XML and Web Services, Web Authoring, Web Applications Development, Multimedia & the Internet)*

Description of Additional Closely Related ICT Units:
- Algorithm design and development
- Client/Server technologies
- Information Security
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Introduction to Multimedia
- Mobile Devices
- Multimedia Technologies
- Object Oriented Systems Analysis and Design
- Object oriented technologies
- Project - *(if the project is a Multimedia / Web project)*
- Requirements gathering
- Systems Analysis
- Systems Design
- Testing strategies and methods

263112 - Network Administrator

Installs and maintains hardware and software, documents diagnosis and resolution of faults, manages user passwords, security and inventory documentation, ensures the efficient performance of servers, printers and personal computers, and attends to other operational tasks. May also perform tasks such as help desk support and user training.

Description of Employment Duties:
- analyzing, developing, interpreting and evaluating complex system design and architecture specifications, data models and diagrams in the development, configuration and integration of computer systems
- researching, analyzing, evaluating and monitoring network infrastructure to ensure networks are configured to operate at optimal performance
- assessing and recommending improvements to network operations and integrated hardware, software, communications and operating systems
- providing specialist skills in supporting and troubleshooting network problems and emergencies
- installing, configuring, testing, maintaining and administering new and upgraded networks, software database applications, servers and workstations
- providing network programming in support of specific business needs and requirements
- preparing and maintaining procedures and documentation for network inventory, and recording diagnosis and resolution of network faults, enhancements and modifications to networks, and maintenance instructions
- monitoring network traffic, and activity, capacity and usage to ensure continued integrity and optimal network performance

Description of Closely Related Core ICT Units:
- Computer Communication
- Computer Network Design
- Computer Network management
- Computer Network programming
- Computer Network protocols
- Data communications - *(WAN, LAN)*
- Distributed Computing
- Mobile technologies
- Operating systems - *(Unix, Linux, Xenix, Network OS)*
- Systems Software
- Wireless technologies - *(Wireless Communication, Microwave Communication)*

Description of Additional Closely Related ICT Units:
- Assembler Languages - *(Assembler Programming)*
- Client / Server related hardware and software
- Client / Server Architecture
- Communications Engineering
- Computer Logic Design
- Computer organization
- Digital and signal processing
- Digital circuits - *(VLSI Design, Integrated Circuit Design)*
- Digital technology
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Microprocessors
- Microwave technology
- Network Component technologies
- Network security
- Optical communication technology
- Peripherals and Interfacing
- Project Management
- Satellite communications

263113 - Network Analyst

Researches and analyses network architecture, and recommends policies and strategies for designing, planning and coordinating an organisation's network such as the total system environment and architecture. May also perform operational tasks such as monitoring system performance, software and hardware upgrades, backups, support and network maintenance.

Description of Employment Duties:
- analyzing, developing, interpreting and evaluating complex system design and architecture specifications, data models and diagrams in the development, configuration and integration of computer systems
- researching, analyzing, evaluating and monitoring network infrastructure to ensure networks are configured to operate at optimal performance
- assessing and recommending improvements to network operations and integrated hardware, software, communications and operating systems
- providing specialist skills in supporting and troubleshooting network problems and emergencies
- installing, configuring, testing, maintaining and administering new and upgraded networks, software database applications, servers and workstations
- providing network programming in support of specific business needs and requirements
- preparing and maintaining procedures and documentation for network inventory, and recording diagnosis and resolution of network faults, enhancements and modifications to networks, and maintenance instructions
- monitoring network traffic, and activity, capacity and usage to ensure continued integrity and optimal network performance

Description of Closely Related Core ICT Units:
- Computer Communication
- Computer Network Design
- Computer Network management
- Computer Network programming
- Computer Network protocols
- Data communications - *(WAN, LAN)*
- Distributed Computing
- Mobile technologies
- Operating systems - *(Unix, Linux, Xenix, Network OS)*
- Systems Software
- Wireless technologies - *(Wireless Communication, Microwave Communication)*

Description of Additional Closely Related ICT Units:
- Assembler Languages - *(Assembler Programming)*
- Client / Server related hardware and software
- Client / Server Architecture
- Communications Engineering
- Computer Logic Design
- Computer organization
- Digital and signal processing
- Digital circuits - *(VLSI Design, Integrated Circuit Design)*
- Digital technology
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Microprocessors
- Microwave technology
- Network Component technologies
- Network security
- Optical communication technology
- Peripherals and Interfacing
- Project Management
- Satellite communications

261399 - Software and Application Programmer

Software and Application Programmers design, develop, test, maintain and document program code in accordance with user requirements, and system and technical specifications.

Description of Employment Duties:
- researching, consulting, analyzing and evaluating system program needs
- identifying technology limitations and deficiencies in existing systems and associated processes, procedures and methods
- testing, debugging, diagnosing and correcting errors and faults in an applications programming language within established testing protocols, guidelines and quality standards to ensure programs and applications perform to specification
- writing and maintaining program code to meet system requirements, system designs and technical specifications in accordance with quality accredited standards
- writing, updating and maintaining technical program, end user documentation and operational procedures
- providing advice, guidance and expertise in developing proposals and strategies for software design activities such as financial evaluation and costing for recommending software purchases and upgrades

Description of Closely Related Core ICT Units:
- Algorithm design and development
- Compilers - *(Compiler Construction, Compiler Theory)*
- Data structures
- Formal languages - *(Formal Methods, Functional Programming)*
- Human Computer Interaction
- Object Oriented Programming
- Operating systems - *(Unix, Linux, Xenix, Network OS)*
- Programming - *(C, C++, Objective C, Visual C, Basic, Visual Basic, Java, Assembler, Cobol, Pascal, PL/1, Fortran, PHP, Pearl, AS3, FoxPro, and similar)*
- Software Engineering
- Systems Programming
- Testing strategies and methods - *(Software Testing)*

Description of Additional Closely Related ICT Units:
- Artificial intelligence
- Automata theory
- Business Information Systems
- Computer Science
- Critical Path Method
- Database design, Database implementation
- Database Management Systems - *(Relational Database, Object Oriented Database, RDBMS)*
- Expert Systems
- File Processing
- Information Systems
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Introduction to Information Systems
- Management Information Systems
- Object Oriented Systems Analysis and Design
- Object Oriented technologies
- Project Management
- Quality management - *(Quality Assurance, Software Quality)*
- Requirements gathering
- Software validation - *(Software Testing)*
- Structure of languages
- Systems Analysis and Design
- Telematics
- User Requirements Definition
- Web Engineering - *(Web Design, Internet Engineering)*

261313 - Software Engineer

Designs, develops, modifies, documents, tests, implements, installs and supports software applications and systems.

Description of Employment Duties:
- researching, consulting, analyzing and evaluating system program needs
- identifying technology limitations and deficiencies in existing systems and associated processes, procedures and methods
- testing, debugging, diagnosing and correcting errors and faults in an applications programming language within established testing protocols, guidelines and quality standards to ensure programs and applications perform to specification
- writing and maintaining program code to meet system requirements, system designs and technical specifications in accordance with quality accredited standards
- writing, updating and maintaining technical program, end user documentation and operational procedures
- providing advice, guidance and expertise in developing proposals and strategies for software design activities such as financial evaluation and costing for recommending software purchases and upgrades

Description of Closely Related Core ICT Units:
- Algorithm design and development
- Compilers - *(Compiler Construction, Compiler Theory)*
- Data structures
- Formal languages - *(Formal Methods, Functional Programming)*
- Human Computer Interaction
- Object Oriented Programming
- Operating systems - *(Unix, Linux, Xenix, Network OS)*
- Programming - *(C, C++, Objective C, Visual C, Basic, Visual Basic, Java, Assembler, Cobol, Pascal, PL/1, Fortran, PHP, Pearl, AS3, FoxPro, and similar)*
- Software Engineering
- Systems Programming
- Testing strategies and methods - *(Software Testing)*

Description of Additional Closely Related ICT Units:
- Artificial intelligence
- Automata theory
- Business Information Systems
- Computer Science
- Critical Path Method
- Database design, Database implementation
- Database Management Systems - *(Relational Database, Object Oriented Database, RDBMS)*
- Expert Systems
- File Processing
- Information Systems
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Introduction to Information Systems
- Management Information Systems
- Object Oriented Systems Analysis and Design
- Object Oriented technologies
- Project Management
- Quality management - *(Quality Assurance, Software Quality)*
- Requirements gathering
- Software validation - *(Software Testing)*
- Structure of languages
- Systems Analysis and Design
- Telematics
- User Requirements Definition
- Web Engineering - *(Web Design, Internet Engineering)*

261314 - Software Tester

Specifies, develops and writes test plans and test scripts, produces test cases, carries out regression testing, and uses automated test software applications to test the behavior, functionality and integrity of computer software, and documents the results of tests in defect reports and related documentation.

Description of Employment Duties:
- researching, consulting, analyzing and evaluating system program needs
- identifying technology limitations and deficiencies in existing systems and associated processes, procedures and methods
- testing, debugging, diagnosing and correcting errors and faults in an applications programming language within established testing protocols, guidelines and quality standards to ensure programs and applications perform to specification
- writing and maintaining program code to meet system requirements, system designs and technical specifications in accordance with quality accredited standards
- writing, updating and maintaining technical program, end user documentation and operational procedures
- providing advice, guidance and expertise in developing proposals and strategies for software design activities such as financial evaluation and costing for recommending software purchases and upgrades

Description of Closely Related Core ICT Units:
- Algorithm design and development
- Compilers - *(Compiler Construction, Compiler Theory)*
- Data structures
- Formal languages - *(Formal Methods, Functional Programming)*
- Human Computer Interaction
- Object Oriented Programming
- Operating systems - *(Unix, Linux, Xenix, Network OS)*
- Programming - *(C, C++, Objective C, Visual C, Basic, Visual Basic, Java, Assembler, Cobol, Pascal, PL/1, Fortran, PHP, Pearl, AS3, FoxPro, and similar)*
- Software Engineering
- Systems Programming
- Testing strategies and methods - *(Software Testing)*

Description of Additional Closely Related ICT Units:
- Artificial intelligence
- Automata theory
- Business Information Systems
- Computer Science
- Critical Path Method
- Database design, Database implementation
- Database Management Systems - *(Relational Database, Object Oriented Database, RDBMS)*
- Expert Systems
- File Processing
- Information Systems
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Introduction to Information Systems
- Management Information Systems
- Object Oriented Systems Analysis and Design
- Object Oriented technologies
- Project Management
- Quality management - *(Quality Assurance, Software Quality)*
- Requirements gathering
- Software validation - *(Software Testing)*
- Structure of languages
- Systems Analysis and Design
- Telematics
- User Requirements Definition
- Web Engineering - *(Web Design, Internet Engineering)*

262113 - Systems Administrator

Plans, develops, installs, troubleshoots, maintains and supports an operating system and associated server hardware, software and databases ensuring optimum system integrity, security, backup and performance.

Description of Employment Duties:

- designing and maintaining database architecture, data structures, tables, dictionaries and naming conventions to ensure the accuracy and completeness of all data master files
- performing the operational establishment and preventive maintenance of backups, recovery procedures, and enforcing security and integrity controls
- implementing and administering database documentation, guidelines, policies and procedures
- testing database systems and upgrades, such as debugging, tracking, reproduction, logging and resolving all identified problems, according to approved quality testing scripts, procedures and processes
- accepting responsibility for the processes, procedures and operational management associated with system security and disaster recovery planning
- liaising with security vendors, suppliers, service providers and external resources; analyzing, recommending, installing and maintaining software security applications; and monitoring contractual obligations, performance delivery and service level agreements
- troubleshooting and providing service support in diagnosing, resolving and repairing server-related hardware and software malfunctions, encompassing workstations and communication infrastructure
- preparing and maintaining documentation, policies and instructions, and recording and detailing operational procedures and system logs
- ensuring that the design of computer sites allows all components to fit together and work properly, and monitoring and adjusting the performance of networks
- continually surveying the current computer site to determine future network needs and making recommendations for enhancements in the implementation of future servers and networks

Description of Closely Related Core ICT Units:

- Backup and Recovery
- Data Encryption
- Database design
- Database implementation
- Database Management Systems - *(Relational Database, Object Oriented Database, RDBMS)*
- Information Systems security
- Internet and the Web
- Operating systems - *(Unix, Linux, Xenix, Network OS)*
- Server related hardware and software
- System Administration
- System Software
- Systems Management
- Systems Programming
- Web security

Description of Additional Closely Related ICT Units:

- Backup and Recovery
- Client Server Technology
- Computer networks
- Critical Path Method
- Data Communications
- Data policy
- Data structures
- Distributed Systems
- File Processing
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Project Management
- Quality management - *(Quality Assurance, Software Quality)*
- Testing strategies and methods

261112 - Systems Analysts

Evaluates processes and methods used in existing ICT systems, proposes modifications, additional system components or new systems to meet user needs as expressed in specifications and other documentation.

Description of Employment Duties:
- working with users to formulate and document business requirements
- identifying, investigating, and analyzing business processes, procedures and work practices
- identifying and evaluating inefficiencies and recommending optimal business practices, and system functionality and behavior
- using project management methodologies, principles and techniques to develop project plans and to cost, resource and manage projects
- taking responsibility for deploying functional solutions, such as creating, adopting and implementing system test plans, which ensure acceptable quality and integrity of the system
- creating user and training documentation, and conducting formal training classes
- developing functional specifications for use by system developers
- using data and process modeling techniques to create clear system specifications for the design and development of system software
- acting as a central reference and information source, providing guidance and assistance in the system project decision making process

Description of Closely Related Core ICT Units:
- Business Information Systems
- Business Intelligence
- Business Process Reengineering
- Business System planning
- Enterprise architecture - *(Enterprise Resource Management, Emerging Technologies)*
- Expert Systems
- Information System Management
- Information Systems, Management Information Systems
- Object Oriented Systems Analysis and Design
- Requirements gathering
- Software Engineering
- Systems Analysis and Design
- System Development
- System Integration
- System Modeling
- UML
- User Requirements Definition

Description of Additional Closely Related ICT Units:
- Algorithm design *(Algorithm development)*
- Artificial intelligence
- Automata theory
- Computer Science
- Critical Path Method
- Database design, Database implementation
- Database Management Systems - *(Relational Database, Object Oriented Database, RDBMS)*
- File Processing
- Human Computer Interaction
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Introduction to Information Systems
- Programming - *(C, C++, Objective C, Visual C, Basic, Visual Basic, Java, Assembler, Cobol, Pascal, PL/1, Fortran, PHP, Pearl, AS3, FoxPro, and similar)*
- Project Management
- Quality management - *(Quality Assurance, Software Quality)*
- Software validation - *(Software Testing, Testing strategies and methods)*
- Web Engineering - *(Web Design, Internet Engineering)*

313113 - Web Administrator

Designs, builds and maintains websites, and provides web technology solutions and services.

Description of Employment Duties:
- determining software and hardware requirements to provide solutions to problems
- responding to inquiries about software and hardware problems
- adapting existing programs to meet users' requirements
- installing and downloading appropriate software
- ensuring efficient use of applications and equipment
- implementing computer networks
- designing and maintaining websites
- repairing and replacing peripheral equipment such as terminals, printers and modems
- may work in a call centre

Description of Closely Related Core ICT Units:
- Introduction to Networking
- Network administration
- Operating systems - *(Unix, Linux, Xenix, Network OS)*
- System Software
- Web administration
- Web Systems Design - *(Interactive System Design)*
- WWW and the Internet – *(Web Technologies, Web Engineering, XML and Web Services, Web Authoring, Web Applications Development, Multimedia & the Internet)*

Description of Additional Closely Related ICT Units:
- Database design
- Database implementation
- Database Management Systems - *(Relational Database, Object Oriented Database)*
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Introduction to Information Systems
- Introduction to Multimedia
- Mobile Devices
- Web programming - *(PHP, Perl, HTML, ASP)*

261212 - Web Developer

Plans, produces and maintains websites using web programming languages, software applications, technologies and databases together with specifications of user needs, often in conjunction with other ICT Professionals such as Business Analysts, Web Designers and network and usability specialists.

Description of Employment Duties:
- analyzing, designing and developing Internet sites applying a mixture of artistry and creativity with software programming and scripting languages and interfacing with operating environments
- designing and developing digital animations, imaging, presentations, games, audio and video clips, and Internet applications using multimedia software, tools and utilities, interactive graphics and programming languages
- communicating with network specialists regarding web-related issues, such as security and hosting websites, to control and enforce Internet and web server security, space allocation, user access, business continuity, website backup and disaster recovery planning
- designing, developing and integrating computer code with other specialized inputs, such as image files, audio files and scripting languages, to produce, maintain and support websites
- assisting in analyzing, specifying and developing Internet strategies, web-based methodologies and development plans

Description of Closely Related Core ICT Units:
- Computer Graphics & Animation - *(2D Computer graphics, 3D Computer graphics, 2D Animation, 3D Animation)*
- Human Computer Interaction - *(Interface Design)*
- Image and media data manipulation - *(Developing Interactive Media, Multimedia Authoring, Games Design)*
- Operating Systems *(e.g. iOS, Android, Linux, Unix)*
- Programming *(e.g. Internet Programming, C++, Java, Objective C, AS3, Games Programming)*
- Software Engineering
- Web Systems Design - *(Interactive System Design)*
- WWW and the Internet – *(Web Technologies, Web Engineering, XML and Web Services, Web Authoring, Web Applications Development, Multimedia & the Internet)*

Description of Additional Closely Related ICT Units:
- Algorithm design and development
- Client/Server technologies
- Information Security
- Introduction to ICT - *(Introduction to Computer Science, Computer Theory, Introduction to Business Computing, Computer Science I)*
- Introduction to Multimedia
- Mobile Devices
- Multimedia Technologies
- Object Oriented Systems Analysis and Design
- Object oriented technologies
- Project - *(if the project is a Multimedia / Web project)*
- Requirements gathering
- Systems Analysis
- Systems Design
- Testing strategies and methods