Student Program Information 2020

Diploma of Software Development (ICT50718)

This document provides the details for the **Diploma of Software Development**. To use the study plans in this document you must apply for and receive an offer for the Diploma of Software Development.

There are several possible study plans with the recommended study plan having the following key features:

> The qualification can be completed in 1 year if you have previous Software Development experience. A new student with no previous programming experience will typically require 2 years to complete all requirements.

> An **industry-based project** is included in the Diploma of Software Development. You are required to self-source a Work based project in a real industry work place or one that could be supported through TAFE SA Work Experience program. A simulated business will be used for the project if a suitable workplace project cannot be self-sourced.

> There is a focus on **mobile application development** with a Windows Mobile development subject with C#, an Android mobile development subject with Java and an iPhone/iPad development subject with Objective C.

> **Web application development** is included in two key approaches – Java based and C#.NET based.

> The Diploma final stage includes a **Cloud Computing** subject.

Subsidised Training

> You may be eligible for government subsidised training based on your employment and training level.

> For full details, including visa eligibility, please see the Skills SA website

> While this course may attract government subsidies, there may also be upfront fees, depending on any required underpinning knowledge and skills.

> **ALL STUDENTS, IRRESPECTIVE OF PREVIOUS STUDIES, WILL BE REQUIRED TO DO THE CORE SKILLS PROFILE FOR ADULTS (CSPA) BEFORE THEY ARE ELIGIBLE FOR GOVERNMENT SUBSIDY.**

IT Studies Subjects

This qualification is from the National Training Package ICT - Information and Communications Technology that is developed by the Commonwealth Government. TAFE SA IT Studies clusters related competencies in the Training Package into subjects. The information below refers to the TAFE SA IT Studies subjects and outlines the competencies that makes up those subjects. Delivery and assessment for the subjects will be done holistically so you will be awarded the same result for all competencies taught in that subject. Your final official results will refer to the competencies listed below.

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Assumed Skills and Knowledge

This is not an entry level qualification. There are assumed skills and knowledge that are required to commence at this Diploma level. These could have been gained in a number of ways:

> Completed the Certificate IV in Information Technology (ICT40515); or

> Other study equivalent to it (refer to the table below); or

> Have work experience and knowledge equivalent to it (refer to the table below).

If you do not have these underpinning skills and knowledge you will need to use a study plan that contains subjects listed or do the qualification listed above. If you need to complete all of these underpinning skills you would be adding another year of study.

Subject	Description
3PRB	This subject introduces the programming constructs of sequence, selection and iteration, array handling and file processing using Python.
4MOS	In this subject, students will learn to be effective users of Microsoft Word, Excel and PowerPoint, acquiring skills and understanding of functions and features of these 3 office applications. Students will learn to be effective users of Microsoft Word, Excel and PowerPoint, mastering tasks such as formatting, embedding and many other functions required in the day to day use of office applications. This subject will give the student the knowledge and skills to attain the MOS (Microsoft Office Specialist) certification.
4HTML5	This subject covers the usage and integration of HTML5 and CSS 3. Students will create an interactive website from scratch by coding using the technologies mentioned above.
4JSB	This subject will cover the basic syntax of JavaScript and enable you to automate client side validation of data on a web page. The use of functions is explored and updating html elements by ID.
4JAB	This subject covers Object-Oriented programming basics using Java. Topics include, classes, aggregation/composition, inheritance, polymorphism, arrays, text and binary streams. NetBeans is used as the development environment.
4BUI	This subject covers the basics of user interface design, and how to plan, design, develop and build user-friendly programs targeting the Universal Windows Platform (UWP) using XAML
4C#B	This subject will focus on the development of Data driven Object Oriented applications in C#.NET and XAML with a focus on application development on UWP Windows platform.
4DBB	This subject will cover the basics of SQL and fundamentals of database design including aspects such as primary and foreign keys, and referential integrity.
4SDB	This subject covers sequence, activity and state diagrams. Agile approach with SCRUM is used in conjunction with OO development methodologies.
4DCR	This subject requires the student to gather information using verbal, written and other techniques and then to turn them into technical requirements for ICT projects. Student will use the skill and knowledge learnt to gather information and verify its accuracy.

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Incidentals

This course also has an incidental cost of $265.00 for 512Gb SSD portable hard drive, webcam and headset with microphone.

Hardware & Software

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

It is important to note that for students studying this course online (externally) it will be assumed that you have the hardware required to run the required resources. It is recommended that you have the following as a minimum;

- Intel i5 CPU (or equivalent AMD)
- 16GB of RAM
- 512GB SSD
- Internet Access

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Required Competencies Diploma of Software Development
National Code: ICT50715 TAFE SA Code: TP00750

This table shows the competencies that you must have on your academic record to achieve this qualification and the IT subjects you would complete.

Subject	National Code	Unit Name	Pre-Requisite
4CEP	**Copyright, Ethics and Privacy**		
	ICTICT418	Contribute to copyright, ethics and privacy in an IT environment	N/A
4PINT	**Python Intermediate**		
	ICTPRG418	Apply intermediate programming skills in another language	3PRB
5TST	**Test applications**		
	ICTPRG503	Debug and monitor applications	4C#B
5JAM	**Java For Mobile Development**		
	ICTPRG527	Apply intermediate object-oriented language skills	4JAB
5TSD	**Team based Software Development**		
	ICTPRG502	Manage a project using software management tools	4C#B
	ICTPRG504	Deploy an application to a production environment	
5C#W	**C#.NET for Web Development**		
	ICTPRG523	Apply advanced programming skills in another language	4C#B
5DD	**Design a Database (mySQL & Oracle)**		
	ICTDBS502	Design a database	4DBB
5WORK	**Workplace Project**		
	ICTPRG520	Validate an application design against specifications	4TST, 5TSD*, 4C#B*,4JAB
	ICTPRG529	Apply testing techniques for software development	
5JAW	**Java For Web Development**		
	ICTPRG501	Apply advanced object-oriented language skills	4JAB
5SDA	**Systems Design Advanced**		
	ICTSAD505	Develop technical requirements for business solutions	4SDB
	ICTPRG506	Design application architecture	
5IOSMD	**IOS Mobile Development Introductory**		
	ICTPRG505	Build advanced user interface	5JAM
5MITP	**Manage ICT Projects**		
	ICTPMG501	Manage ICT Projects	5IOSMD
6CLP	**Cloud Programming**		
	ICTPRG604	Create Cloud computing services	5C#W

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Subject Description

Subject	Description
4CEP	This subject involves maintaining professional and ethical conduct as well as to ensure that personal information of stakeholders is handled in a confidential and professional manner when dealing with stakeholders in an information technology (IT) environment.
4PINT	This subject covers Python coding at an intermediate level and will cover lists with sorting and searching techniques, functions with parameter passing and the design and testing of code.
5TST	This subject covers how to setup test plans and test cases. For unit testing, testing frameworks are used such as Nunit and Junit. IBM Rational Functional Tester is also used for automating the testing process. The subject also covers the debugging and monitoring of applications under test.
5JAM	Builds on Beginning Java (4JAB) by looking at collections, interface development and database connectivity but in a mobile environment using ANDROID. Android Studio is used as the IDE.
5TSD	This subject focuses on team software development issues such as configuration and release management, and testing (testing techniques, test plans, functional testing, bug tracking). Software patches will be generated for product release and subsequent maintenance. Open source development issues are covered. Subversion is used for configuration management.
5C#W	This subject uses ASP.NET and C#.NET to develop a web-based application. Topics include, ASP basics (various controls), data access, security issues and using web services
5DD	Database related concepts such as ERDs, referential integrity, normalisation, indexing and query performance and OO Databases. Visual design tools are used such as MySQL Workbench for MYSQL database and JDeveloper for Oracle database. Latest database technologies will also be discussed.
5SDA	This subject presents the concepts and techniques necessary to effectively use system requirements captured with use cases to drive the development of a robust design model. It includes coverage of a variety of design patterns and uses the Unified Process approach and the Rational Rose tool.
5WORK	This subject uses a Workplace project to validate your ability to review an application design and perform testing tasks. If a placement in industry cannot be found then a provided group based project will be used.
5JAW	This subject covers the development and deployment of J2EE applications. It includes, Servlets, JSP and JSF. Netbeans is used as the IDE.
5IOSMD	The subject uses iOS based devices including iPhones and iPads The skills will be learnt in the context of developing multi-touch applications, integrating with SQLite databases,. This course uses Objective C as the programming language and XCode and iPhone SDK as the development tools.
5MITP	This subject describes the skills and knowledge required to manage the initiation, implementation and completion of reasonably complex information and communications technology (ICT) projects incorporating scope, risk control and financial factors
6CLP	Cloud computing is one of the fastest growing technologies today. This course covers the what, why and how of Cloud computing and services. You will learn how to set up a cloud service and use various technologies to implement and support these services such as Microsoft Azure and Windows Communication Foundation (WCF) using C#.NET 4.0. The course will focus on the implementation of cloud services such as Software as a Service (Saas) and Software as a Platform.

TAFE SA Study Plan for Full-Time Students who DO NOT have the Assumed skills and Knowledge (24 months) S5AS

I am interested in achieving Diploma in Software Development, but also:

> Keeping the cost of achieving the Diploma in Software Development to a minimum;

> I do not mind missing out on early exit options of a Certificate IV Programming

> Understand that I need to pay for some of the underpinning skills and knowledge component (see page 2);

Year 1				Year 2			
Stage 1		**Stage 2**		**Stage 3**		**Stage 4**	
4DBB (2) Practicals (6)		4SDB (2) 5TST (2) 4JAB (2) 4PINT (2) Practicals (8)		5JAM (2) 5C#W (2) 5DD (2) 5TSD (2) 5WORK (2) 5MITP (2) Practicals (6)		5IOSMD (2) 5JAW (2) 6CLP (2) 5SDA (2) 5WORK (2) Practicals (8)	
Term 1	**Term 2**	**Term 1**	**Term 2**	**Term 1**	**Term 2**	**Term 1**	**Term 2**
4HTML5 (2) 3PRB (2) 4BUI (2) 4MOS (2)	4C#B (4) 4CEP (2) 4DCR (2)	4JSB (2)		*There are no term based subjects in stage 3*		*There are no term based subjects in stage 4*	
16	16	18	16	18		18	

Please Note: The program structures in the document are subject to change.

Legend:.

( )   The number in brackets after the subject is the indicative number of contact hours per week that you expect to study at a TAFE SA campus for that subject.

NOTE: The study plan is for a full-time student with class-attendance. This is usually between 16-18 hours a week of attendance. Your local campus may offer the subject in a variety of formats including online, self-paced etc.

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TAFE SA Study Plan for Full-Time Students with the Assumed skills and Knowledge (12 months) S5XS

The table below shows the study plan for the Diploma of Software Development. Each stage is one Semester (or 6 months) in length.

Year 1			
Stage 1		**Stage 2**	
5JAM (2) 5C#W (2) 5DD (2) 5TSD (2) 5WORK (2) 4CEP(2) 4PINT(2) Practicals (4)		5IOSMD (2) 5JAW (2) 6CLP (2) 5SDA (2) 5MITP (2) 5TST (2) Practicals (6)	
Term 1	**Term 2**	**Term 1**	**Term 2**
There are no Term 1 subjects	*There are no Term 2 subjects*	*There are no Term 1 subjects*	*There are no Term 2 subjects*
(18)	*(18)*	*(18)*	*(18)*

Please Note: The program structures in the document are subject to change.

Legend:.

( )   The number in brackets after the subject is the indicative number of contact hours per week that you expect to study at a TAFE SA campus for that subject.

NOTE: The study plan is for a full-time student with class-attendance. This is usually 18 hours a week of attendance. Your local campus may offer the subject in a variety of formats including online, self-paced etc.

[Click here to apply for this qualification](#)

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