

# TRAINING & ASSESSMENT STRATEGY

## ICT40515 Certificate IV in Programming

This training and assessment strategy is intended to inform trainers and assessors involved in the delivery of training and the collection of assessment evidence. It is also relevant to students, employers or supervisors. The strategy provides a top down perspective of the course and the training and assessment to be applied. This is a working document and will change over time as the course is subjected to continuous improvement. The training and assessment strategy should be read in conjunction with supporting learning and assessment documentation and CBC's Student Handbook.

Published by the Canterbury Business College (CBC)  
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## Training and Assessment Strategy

<b>Name of RTO</b>	<b>Canterbury Business College Pty Ltd</b>
<b>Training Package</b>	<b>ICT Information and Communications Technology Training Package</b>
<b>Code and title of qualification</b>	<b>ICT40515 Certificate IV in Programming</b> CRICOS Code – 086576D
<b>Course Fee / Tuition Fee</b>	\$AU <b>9,500</b> (includes tuition fees plus any additional compulsory costs)  Please note Canterbury Business College reserves the right to vary Tuition Fees and/or Material Fees without prior notice. Please contact the College prior to enrolling to confirm the current cost and fee structure and refer to the Pre-enrolment Information Pack (Brochure) for Student Refund and Cancellation Policy.
<b>Qualification Packaging rules</b>	<b>Total number of units = 18 (Core units – 10 / Elective units - 8)</b>  Elective units guided by the core function or role of the current or intended work environment, local industry requirements, and the characteristics of the AQF level of this qualification.

### Units of competencies

Cluster Name	Unit Code	Unit Name	Nominal Hours	Core / Elective
<b>TERM 1</b>				
<b>Fundamental Programming</b>	ICTICT418	Contribute to copyright, ethics and privacy in an IT environment	40	Core
	ICTPRG405	Automate processes	40	Core
	ICTPRG406	Apply introductory object-oriented language skills	60	Core
	ICTDBS403	Create basic databases	20	Elective
	ICTPRG402	Apply query language	40	Core
<b>TERM 2</b>				
<b>Intermediate Programming - 1</b>	ICTPRG414	Apply introductory programming skills in another language	60	Core
	ICTPRG410	Build a user interface	40	Core
	ICTPRG407	Write script for software applications	40	Elective
	ICTPRG403	Develop data-driven applications	40	Core
	ICTPRG404	Test applications	20	Core
<b>TERM 3</b>				
<b>Intermediate Programming - 2</b>	ICTPRG418	Apply intermediate programming skills in another language	60	Elective
	ICTPRG428	Use regular expressions in programming languages	40	Elective
	ICTPRG527	Apply intermediate object-oriented language skills	60	Elective
	ICTPRG401	Maintain open-source code programs	40	Elective
<b>TERM 4</b>				
<b>System Analysis &amp; Design</b>	ICATRG419	Analyse software requirements	60	Core
	ICTSAD401	Develop and present feasibility reports	40	Elective
	ICTICT408	Create technical documentation	40	Elective
	ICTPRG415	Apply skills in object-oriented design	60	Core

<b>Course Description</b>	<p>This qualification provides the skills and knowledge for an individual to develop basic programming skills in the most commonly used programming languages.</p> <p>A person with this qualification could work as an assistant programmer in a team of software developers or as a support programmer to more senior programmers or systems analysts.</p> <p><b>Job roles</b></p> <p>Job roles and titles vary across different industry sectors. Possible job titles relevant to this qualification include:</p> <ul style="list-style-type: none"> <li>• assistant applications programmer</li> <li>• assistant programmer</li> <li>• assistant software developer</li> <li>• assistant web application programmer</li> <li>• assistant web developer</li> </ul> <p><i>(As per ICT Information and Communications Technology Training Package)</i></p>
<b>Duration</b>	<p>The training program for Certificate IV in Programming is conducted over a 52-week period (includes term breaks) is divided into 4 terms.</p> <p>CBC students will attend class equivalent to 20 hours per week in full-time mode.</p> <p>Total Duration with Holidays = 52 weeks Holidays = 12 weeks</p> <p>Please contact <a href="mailto:info@canterburybc.com.au">info@canterburybc.com.au</a> for a copy of timetable.</p>
<b>Pre-requisite requirements</b>	<p><b>Qualification Pathways</b></p> <p>There are no entry requirements for this qualification. <i>(As per ICT Information and Communications Technology Training Package version 2.0)</i></p> <p><b>Pathways INTO the qualification</b></p> <p>Preferred pathways for candidates considering this qualification include:</p> <ul style="list-style-type: none"> <li>• After achieving ICT30115 Certificate III in Information, Digital Media and Technology, or other relevant qualifications or units equivalent to the core of ICT30115 as listed below – <ul style="list-style-type: none"> <li>- BSBOHS302 Participate effectively in OHS communication and consultative processes</li> <li>- BSBSUS301 Implement and monitor environmentally sustainable work practices</li> <li>- ICAICT202 Work and communicate effectively in an IT environment</li> <li>- ICAICT301 Create user documentation</li> <li>- ICAICT302 Install and optimise operating system software</li> <li>- ICASAS301 Run standard diagnostic tests</li> </ul> </li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• With demonstrated vocational experience in a range of programming-related work environments in software programming, application programming, web development or similar.</li> <li>• Overseas candidates must provide evidence of successful completion of an IT course which meets the unit outcomes as mentioned above.</li> <li>• If candidate already hold a Certificate II, III or IV in IT, he/she will need to submit verified Certificates / Statement of Attainment for recognition purposes.</li> </ul> <p><b>Pathways FROM the qualification</b></p> <ul style="list-style-type: none"> <li>• ICT50715 Diploma of Software Development or a range of Diploma qualifications</li> </ul>
<b>Licensing, legislative, regulatory or certification</b>	<p>There is no link between this qualification and licensing, legislative or regulatory requirements. However users should confirm requirements with the relevant federal, state or territory authority. There may be some alignment with industry standard certification competencies.</p>

considerations	
<b>Language Literacy and Numeracy (LLN) requirements</b>	<ul style="list-style-type: none"> <li>• Canterbury Business College is committed to provide education opportunities to its students from non-English-speaking background (NESB).</li> <li>• Canterbury Business College will use enrolment procedures aimed at ensuring that only students with the requisite LLN skills enrol in its courses as stated in its assessing student's qualifications and English language proficiency Policy and Procedure.</li> <li>• Canterbury Business College recognises the need to pay particular attention to issues related to language in its training and assessment, in order to cater to the needs of the largest section of its target market, i.e. NESB students.</li> <li>• Canterbury Business College will take all reasonable measures to ensure that its staff are aware of the students' specific learning needs and make reasonable adjustments to training and assessment practices to cater for such needs.</li> <li>• Canterbury Business College reserves the right to refer students whose English language proficiency is demonstrably inadequate for their course to enrol in a package course comprising an ELICOS course of sufficient duration in an approved English Language Teaching (ELT) Centre.</li> <li>• If after the commencement of a program it is identified that a student has a Language, Literacy and Numeracy (LLN) issue; our staff can discuss different ways of conducting training and assessment to assist students to access additional tutorial (generally on Fridays) with the Head Trainer.</li> <li>• Students requiring any assistance or support with language, literacy or numeracy should speak confidentially with their trainers and assessor who will call on the Head Trainer and/or other assessors for assistance and guidance as required.</li> </ul>
<b>Clients</b>	<p>CBC's clients for this qualification are international students who would like to develop their skills and knowledge in order to create further educational and employment opportunities.</p> <p>Entry requirements for students:</p> <ul style="list-style-type: none"> <li>• An overall IELTS band 5.5 or equivalent and above</li> <li>• 18 years and above with a High School Certificate (Year 12)</li> <li>• Students will / may have to meet the entry criteria's depending on individual qualification requirements.</li> </ul>

**Learning and assessment arrangements**

**Organisation – Training units combinations**

The ICT40515 program contains 18 units (10 Core & 8 Electives units) and will be delivered at the organisation’s training centre.

To meet the requirements of this qualification involves the completion of all 18 units.

**Organisation’s Delivery plan**

All units within this qualification are combined into clusters (Refer to cluster breakdown). A logical sequence is maintained for all the clusters.

Where applicable unit assessments having similar elements / criteria’s / outcomes will be combined with appropriate assessment tools (Refer to the assessment plan to review the assessment tools used in the qualification) to achieve holistic assessment requirements to complete the qualification.

The clusters are placed in a logical fashion to achieve critical aspects of assessments for progressive development of competency achieved from previous units / clusters. Units within clusters have multiple assessment tools to simulate / reflect real time workplace requirements.

The qualification combines face-to-face trainer led theory/practical classes involving small groups/ individual activities, in a simulated environment resembling the workplace setting as close as possible.

Cluster Name	Unit (s) of Competency
<b>Fundamental Programming</b>	ICTICT418 Contribute to copyright, ethics and privacy in an IT environment
	ICTPRG405 Automate processes
	ICTPRG406 Apply introductory object-oriented language skills
	ICTDBS403 Create basic databases
	ICTPRG402 Apply query language
<b>Intermediate Programming - 1</b>	ICTPRG414 Apply introductory programming skills in another language
	ICTPRG410 Build a user interface
	ICTPRG407 Write script for software applications
	ICTPRG403 Develop data-driven applications
	ICTPRG404 Test applications
<b>Intermediate Programming - 2</b>	ICTPRG418 Apply intermediate programming skills in another language
	ICTPRG428 Use regular expressions in programming languages
	ICTPRG527 Apply intermediate object-oriented language skills
	ICTPRG401 Maintain open-source code programs
<b>System Analysis &amp; Design</b>	ICTPRG419 Analyse software requirements
	ICTSAD401 Develop and present feasibility reports
	ICTICT408 Create technical documentation
	ICTPRG415 Apply skills in object-oriented design

## **Delivery modes**

### **Simulated workplace environment**

CBC ensures that the training delivered is to the standards of a real workplace environment. To meet this requirement CBC has implemented a variety of assessment tools that will be implemented during the course of the qualification. These assessment tools assess various different elements of a real / actual workplace however in a simulated training environment.

CBC meets the need for a real-time workplace simulation environment by:

- A dedicated computer lab to reflect a real-time work environment for all practical training components of the course.
- The CBC trainers represent the role of a real client and portray the workplace demands while working on projects. This includes role play of difficult & diverse type customers.
- Students prepare time lines, schedule milestones, communicate, prepare documentation, conduct training in accordance with the client (trainer)
- Working as a team (group work/assignments), fulfilling responsibilities and expectations of the job and workplace.
- Assignments, which include multi-tasking, different roles within assignments, using workplace policies and templates.

Also, emphasis will be made to **simulate workplace situations** in order to develop identified employability skills such as:

- communicating with business contacts to promote the goals and objectives of the business
- obtaining feedback from colleagues and clients leading, planning and supervising the performance of team members to develop team cohesion and to foster innovative work practices
- accessing and assessing information for accuracy and relevance
- developing strategies for minimising risks identifying networking opportunities and developing operational strategies to ensure the viability of the business
- instigating new or different work practices to improve productivity or service delivery allocating work to meet time and budget constraints
- developing plans and schedules prioritising tasks
- using business technology to access, organise and monitor information
- participating in professional networks and associations to obtain and maintain personal knowledge and skills
- systematically identifying learning and development needs

### **Evidence-gathering techniques / Assessment tools**

Evidence-gathering techniques takes place throughout the whole process and units of competency are assessed individually and within the cluster organisation.

In order to facilitate a flexible approach to both learning and assessment, the evidence gathering is both formative and summative. Formative evaluation is ongoing throughout the delivery of the learning sequence at times mutually agreed upon between the assessor and the student. The form and timing of summative assessment will be discussed with the students at the beginning of each learning sequence.

Please refer to **Appendix 1** for Evidence gathering techniques / Assessment tools.

### **Combinations of these methods will be used for most situations (eg. observations and oral questioning)**

Please contact [info@canterburybc.com.au](mailto:info@canterburybc.com.au) for more information on Evidence gathering techniques / Assessment tools.

### **Delivery and assessment staff**

A qualified Trainer and Assessor who will perform the assessments must possess the following:

- TAE40110 Certificate IV in Training and Assessment
- Vocational qualifications at least up to the same level they are delivering
- At least three years of relevant industry experience
- At least three years of teaching/training experience

Staff Matrix is available for review on request.

### **Recognition of Prior Learning (RPL) / Credit Transfer (CT)**

Canterbury Business College recognises the skills and knowledge that students may have gained through previous studies, workplace and life experience. They may be entitled to gain recognition of prior learning before or after commencing the course that may exempt them from attending one or more units.

Students who believe they already have the skills and knowledge required to demonstrate competency can request a copy of the RPL application form. Students are provided with information regarding the evidence required for each qualification and must provide valid, sufficient, current and authentic evidence to demonstrate competency.

RPL is based on a portfolio and interview approach, where students accept the main responsibility for identifying, gathering and submitting evidence about their achievement of the competencies.

The RPL process may involve a practical demonstration assessment.

Where RPL is granted to overseas students the College will notify DIBP of the change to the duration of study or ensure a full-time 20 hour per week load for the student.

### **Special Needs Arrangements (Reasonable Adjustments)**

All students, including those with disabilities, are treated equally, with dignity and be able to enjoy the benefits of the educational experience in the same way.

If there are students with special needs, the trainer/assessor takes into account the students' needs and makes appropriate adjustments to the training environment, wherever feasible and practicable and in consultation with the Principal and Head Trainer.

### **Transition Arrangements**

The Principal is fully responsible for ensuring the management of the students into the revised version of this course.

This will include:

- Consultation with appropriate industry personnel to ensure relevance of learning and assessment materials.
- Revising and upgrading of existing assessment tools to the requirements of the revised qualification.
- Creation of new identified assessment tools.
- Revising and upgrading of existing learning materials to the requirements of the revised qualification.
- Creation and purchasing of new learning materials.
- Rewriting of this learning and assessment strategy to match the new qualification
- Training and or up-skilling of existing trainers and assessors into the requirements of the new qualification
- Updating of the trainer assessor matrix, mapping tables and other relevant documents against the new qualification.



### Intervention Strategies

An Intervention Strategy is a plan of action that anticipates barriers and resources in relation to achieving a specific objective. Canterbury Business College endeavours to anticipate students' needs and implements a range of intervention strategies. Resources and facilities provide students with options to complete each unit of competency. If the student is deemed not yet competent or if he/she does not show an understanding of the course being taught, the student may be asked to:

- Discuss an intervention plan with the Head Trainer.
- Sit for a re-assessment.
- Attend a number of supervised studying hours.
- Repeat the unit

### Assessment Process

The following describes the process for conducting assessments against the units of competency identified:

– **Step 1: Prepare for assessment.** The assessor is to:

- establishes the context and purpose of the evidence to be collected;
- identify and analyse the units of competency, training package and CBC's assessment strategy to identify the evidence requirements; and
- review the assessment tools and confirm their currency and adequacy in meeting the rules of evidence.

– **Step 2: Prepare the student.** The assessor meets with the student to:

- explain the context and purpose of the assessment and the assessment process;
- explain the units of competency to be assessed and the evidence to be collected;
- outline the assessment procedure and the preparation the student should undertake, and answer any questions;
- assess the needs of the student and, where applicable, negotiate reasonable adjustment for assessing people individual needs;
- seek feedback regarding the student's understanding of the evidence requirements and assessment process; and
- determine if the student is ready for assessment.

**Step 3: Plan and prepare the evidence-gathering process.** The assessor must:

- establish a plan for gathering sufficient quality evidence about the student's consistent performance in order to make the assessment decision;
- organise equipment or resources required to support the evidence-gathering process; and
- coordinate and brief other personnel involved in the evidence-gathering process.

	<p>– <b>Step 4: Collect the evidence and make the assessment decision.</b> The assessor must:</p> <ul style="list-style-type: none"> <li>• establish and oversee the assessment process to ensure its validity, reliability, fairness and flexibility;</li> <li>• collect appropriate evidence and match compatibility to the unit of competency;</li> <li>• incorporate allowable adjustments to the assessment procedure without compromising the integrity of the competencies;</li> <li>• evaluate the evidence in terms of validity, consistency, currency, authenticity and sufficiency;</li> <li>• consult and work with other staff, or technical experts involved in the assessment process;</li> <li>• record details of evidence collected; and</li> <li>• make a judgement about the student’s competence based on the evidence and the relevant unit(s) of competency.</li> </ul>
	<p>– <b>Step 5: Provide feedback on the assessment.</b> The assessor must provide advice to the student about the outcomes of the assessment process. This includes providing the student with:</p> <ul style="list-style-type: none"> <li>• clear and constructive feedback on the assessment decision;</li> <li>• information on ways of overcoming any identified gaps in competency revealed by the assessment;</li> <li>• the opportunity to discuss the assessment process and outcome; and</li> <li>• information on reassessment and the appeals processes if applicable.</li> </ul>
	<p>– <b>Step 6: Record and report the result.</b> The assessor must:</p> <ul style="list-style-type: none"> <li>• record the assessment outcome according to the policies and procedures</li> <li>• maintain records of the assessment procedure, evidence collected and the outcome according to the policies and procedures;</li> <li>• maintain the confidentiality of the assessment outcome; and</li> <li>• report the assessment outcome to CBC.</li> </ul>
	<p>– <b>Step 7: Review the assessment process.</b> On completion of the assessment process, the assessor must:</p> <ul style="list-style-type: none"> <li>▪ review the assessment process;</li> <li>▪ report on the positive and negative features of the assessment to those responsible for the assessment procedures; and</li> <li>• if necessary, suggest to CBC management ways of improving the assessment procedures through raising a Continuous Improvement Report or by providing input to the next scheduled management meeting or assessment validation.</li> </ul>

- **Step 8: Participate in the reassessment and appeals process.** The assessor must:
  - provide feedback and counselling to the student, if required, regarding the assessment outcome or process, including guidance on further options;
  - provide the student with information on the reassessment and appeals process;
  - report any assessment decision that is disputed by the student to the appropriate personnel; and
  - participate in the reassessment or appeal according to the policies and procedures.

### **Assessment validation process**

The processes used to validate assessment activity in this program are:

#### **1. Pre-assessment**

Assessment strategies are developed through consultation with industry representatives to ensure assessment methods are consistent with industry needs. Assessment tools and activities are validated by assessors from within the RTO or from another RTO that delivers the same or a similar course, or from external industry representatives.

Validation before assessment focuses on:

- the design of assessment activities;
- the assessment methods that are to be used;
- the benchmarks against which each participant is assessed.

#### **2. Post-assessment**

In order to ensure that assessment outcomes are reliable across a range of assessors, over a range of contexts and over time, Canterbury Business College conducts post-assessment validation.

The Post-assessment Validation process focuses on:

- The assessment tasks and the assessment process;
- The evidence of participants' performance;
- The assessment decisions made on the samples of evidence provided;
- Reporting and record keeping.

It includes the following activities:

- Validation meetings;
- Moderation process;
- Student and Trainer/Assessor's Feedback;

### **Assessment Moderation Process**

The Head Trainer/Assessor conducts Assessment moderation at the end of each term by collecting samples of assessment evidence from all assessors for the same unit of competency, and compares the outcomes of the assessment process against the assessment and unit requirements.

Feedback from students and trainers/assessor is collected to support the continuous improvement of the assessment process and assessment tools used by the RTO.

### Other requirements

- All staff (including full time, part time and casual) involved in the delivery and assessment of this qualification, have direct access to the current version of the ICT Information and Communications Technology Training Package, including the appropriate units of competency, assessment guidelines and qualification structure through the TGA website.
- All staff (including full time, part time and casual) involved in delivering the program, have access to trainer, assessor and candidate support materials relevant to their areas of delivery and assessment.
- All assessors have access to point and electronic copies of the assessment tools used in this program. Learning resources are supplied to all students
- The RTO has access to staff and training/assessment resources to meet the requirements of students with special needs and has an assessment process that incorporates reasonable adjustment procedures. (Reasonable adjustment refers to measures or actions taken to provide a student with a disability the same educational opportunities as everyone else.)
- The RTO has reviewed the equipment and facility requirements for each unit of competency in the qualification and guarantees it has access to the plant and equipment needed to implement the program.
- Classrooms for the delivery of Theory based Units
  - Tables & Chairs, Whiteboard or Flipchart
  - Data projector
  - Computers with Internet access / WIFI
- Office Equipment for practical demonstration assessments
  - Desks or work stations with Ergonomic Chairs
  - Computers with Internet Access
  - Photocopier
- Text books and reference library

Please refer to **Appendix 2** for Resource Material / Textbooks

### **Recording assessment evidence and candidate feedback**

It is mandatory that assessors record detailed evidence of the student's demonstrated knowledge and skills. The comments fields within the assessment tools are to be used to record detailed commentary on the knowledge and skills demonstrated by the student. The Assessment Summary Report is to be used to record the overall assessment finding and the feedback that is provided to the student. These comments should be as detailed as possible.

This completed assessment record will be retained by CBC in archive and may be accessed in the future as part of a review of the quality of evidence being gathered by CBC relating to a particular unit of competency or as part of a general audit of CBC's assessment strategy.

Candidates should be given a chance to comment on their performance prior to getting feedback from the assessor.

At the conclusion of the assessment, the assessor will complete the Assessment Summary Report for each candidate and indicate whether the candidate is competent or not yet competent. The Assessment Summary Report together with all assessment materials should be retained and filed within the student's academic record.

### **Re-assessment**

Students who are assessed as not yet competent are to be provided with detailed feedback to assist them to identify the gaps in their knowledge and skills to be addressed through further training. These students are to be provided with additional training and learning support to target their specific gaps in knowledge and/or skills and prepare them for additional assessment.

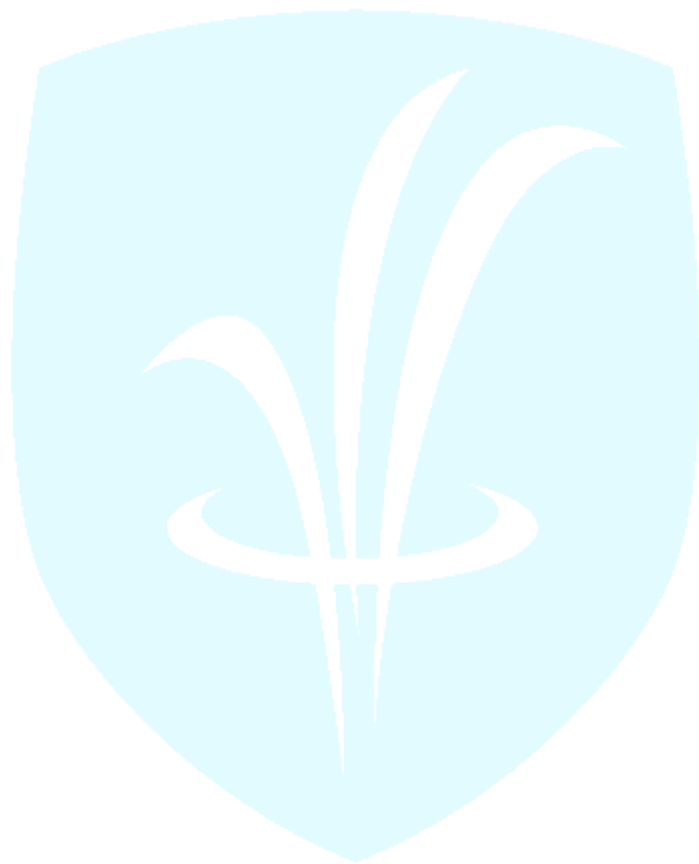
For more information, please refer to Resit / Re-assessment procedure section in the Student Handbook.

### **Benchmarks for assessment**

In accordance with the Business Services Training Package, the endorsed unit of competency is the benchmark for assessment. As such, the unit of competency being assessed in these assessment activities has been unpacked to identify the required knowledge and skills to be demonstrated by the student. These are represented in the observation assessment criteria, and written knowledge questions which have been developed by analysing the whole unit including elements of competence, performance criteria, range information, required knowledge and skills and the evidence guide. These have been represented in the sequence this work is usually performed. The assessor is required to facilitate the observation of these knowledge and skills and is required to record what was actually observed to evidence these benchmarks of assessment.

<b>Third Party Arrangement</b>	<p>Canterbury Business College has an agreement with <b>Cogninet Australia Pty Ltd</b> to provide training and assessment services which include trainer’s management and compliance services.</p> <p><b>Contact details:</b>  Cogninet Australia Pty Ltd  Level 5, 29-35 Bellevue St  Surry Hills, NSW 2010  Email: <a href="mailto:info@cogninet.com.au">info@cogninet.com.au</a>  Web: <a href="http://www.cogninet.com.au">www.cogninet.com.au</a></p>
<b>Learner’s rights for training and assessment</b>	<p>Please read Student Handbook for learner’s rights and obligation under Tuition Protection Scheme section. A copy of Student Hand Book can be downloaded from CBC website ( <a href="http://www.cbc.nsw.edu.au">www.cbc.nsw.edu.au</a>).</p>
	<p><b>Industry Consultation</b>  Canterbury Business College has liaised with the following organization / individuals for its industry consultation for ICT Information and Communications Technology Training Package. Minutes of meeting / discussion are available for review on request.</p> <p><b>Paul Jeric Baluyut</b>  <b>Software Developer - Networklogic</b>  Phone: 0430025610  <a href="mailto:paulbaluyut@gmail.com">paulbaluyut@gmail.com</a></p> <p><b>Agha Hasan Mirza</b>  <b>CEO – ENCE.NET.AU</b>  Phone: 0431288876  <a href="mailto:agha@hotmail.com">agha@hotmail.com</a></p> <p><b>Eddie Vanza</b>  <b>IT System Integrator - Mytechsupport</b>  Phone: 0412876000  <a href="mailto:ask@mytechsupport.com.au">ask@mytechsupport.com.au</a></p>

CEO’s endorsement:	<b>Gajinder Paul</b>	Date:	<b>16 March 2015</b>
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# Assessment Plan for ICT40515 Certificate IV in Programming

Cluster Name	Practical Tools				Written tools				Observation Tools			
	Programming / Practical Activity	Diagrammatical Representation	Design Algorithms	Testing \ Troubleshooting \ Documentation	Report Writing	Problem Scenario \ Case Scenario \ Q & A	Written Questions \ MCQ	Project / Task Documentation	Demonstration	Presentation	Discussion	Oral Questioning
<b>Fundamental Programming</b>												
ICTICT418 Contribute to copyright, ethics and privacy in an IT environment							A1	A1				
ICTPRG405 Automate processes	A1					A1	A1		A1			
ICTPRG406 Apply introductory object-oriented language skills	A1								A1			
ICTDBS403 Create basic databases	A1						A1		A1			

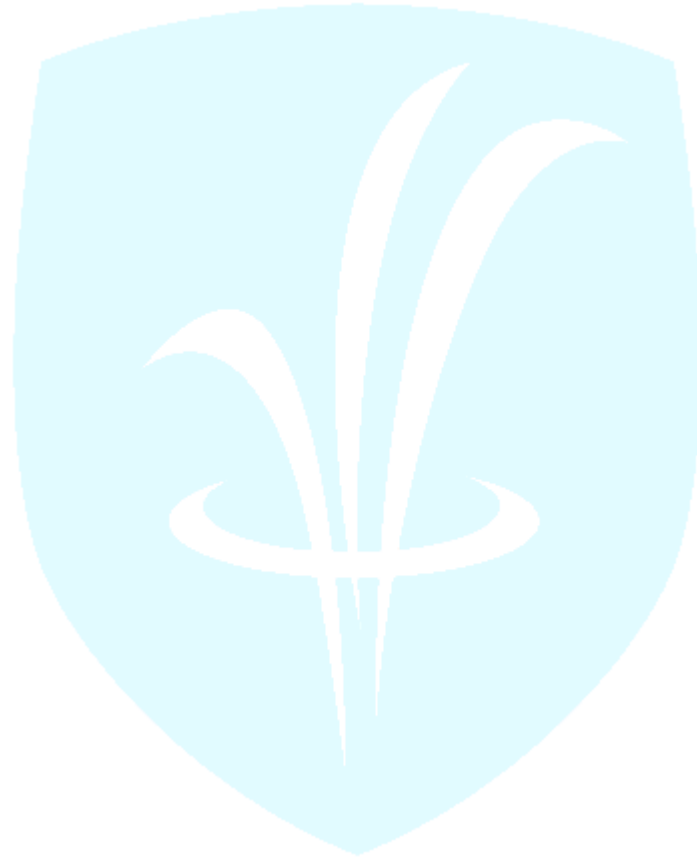


ICTPRG402 Apply query language	A1						A1			A1			
<b>Intermediate Programming - 1</b>					<input type="checkbox"/>								
ICTPRG414 Apply introductory programming skills in another language	A1									A1			
ICTPRG410 Build a user interface	A1									A1			
ICTPRG407 Write script for software applications	A1									A1			
ICTPRG403 Develop data-driven applications	A1									A1			
ICTPRG404 Test applications	A1						A1			A1			
<b>Intermediate Programming - 2</b>													
ICTPRG418 Apply intermediate programming skills in another language	A2			A2			A1			A2			
ICTPRG428 Use regular expressions in programming languages	A1					A1	A1			A1			
ICTPRG527 Apply intermediate object-oriented language skills	A1			A1				A1		A1			
ICTPRG401 Maintain open source code programs	A1						A1			A1			
<b>System Analysis &amp; Design - 1</b>													
ICTPRG419 Analyse software requirements		A1				A1		A2			A1	A1	
ICTSAD401 Develop and present feasibility reports		A1				A1		A2			A1	A1	
ICTICT408 Create technical documentation		A1				A1		A2			A1	A1	
ICTPRG415 Apply skills in object-oriented design		A1				A1		A2			A1	A1	

Short Codes for Assessment : A1 : A Represents the assessment and 1 represent the assessment sequence, so A1 is assessment one. For ex A1, A2 in any unit means there are two assessments for that unit.

**Q & A : Questions and Answers**

**MCQ : Multiple Choice Questions**



## Appendix 2 – Resource Material / Textbooks

S.NO	Book Name - Topics Covered / Author
1	A practical approach to Visual Basic 2005, Ilias Grivas
2	Project Management - A competency based approach, Stephen Hartley
3	The JAVA Way - An introduction to programming in Java - 2nd edn, Gerard Sparke
4	ICAB4225B - Automate processes, Pearson Education Australia
5	BSBCMN304A - Contribute to personal skill development & learning, Pearson Education Australia
6	Create User and Technical Documentation, VetIT
7	Software Testing Fundamentals (Methods & Metrics), Marnie L. Hutcheson
8	Testing Computer Software, Cem Kaner, Jack Falk, Hung Quoc Nguyen
9	Software Testing, Ron Patton
10	Testing IT (An Off-the-Shelf Software Testing Process), John Watkins
11	ICA30104 - Networking Essentials - Installation and management of network protocols, Network Administration basics, Network Configuration and management, Administering network peripherals, Troubleshooting network protocols.
12	ICA30104 - Software Essentials - (Migrate to new Technology, Implement system software changes, Use advanced features of Computer applications, Customise packaged software applications for clients/Customising Software)
13	ICA30104 - Client Support Essentials - (Migrate to New Technology, Connect internal hardware components, Provide basic system administration)
14	ICAT3025A - Run Standard Diagnostic Tests
15	ICAB3018A - Develop Macros and Templates for Clients
16	Ethics in ICT - An Australian Perspective, Donald McDermid
17	ICAD4217A - Create Technical Documentation
18	ICA30104 - IT Essentials
19	ICA40104 - The IT Professional: You, the Client and the Project, John Olekalns
20	Visual Basic 2008 For Students, 3e, Bell - Pearson
21	Introduction to Programming Using Visual Basic 2008, Schneider - Pearson
22	Business Communication handbook, Dwyer - Pearson
23	Project Management, 2e, Hartley- Pearson

24	The IT professional: You, the client & the project, Olekalns - Pearson
25	ICAB4225B - Automate processes - Pearson
26	BSBCMN304A - Contribute to personal skill development & learning - Pearson
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