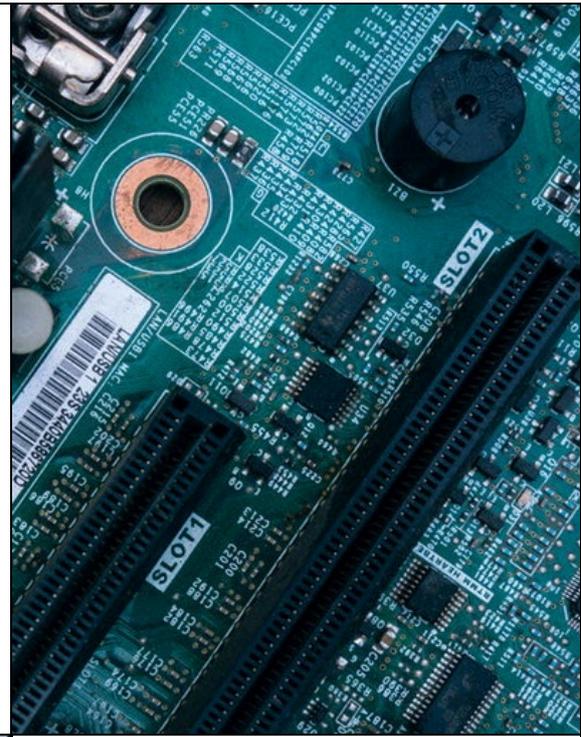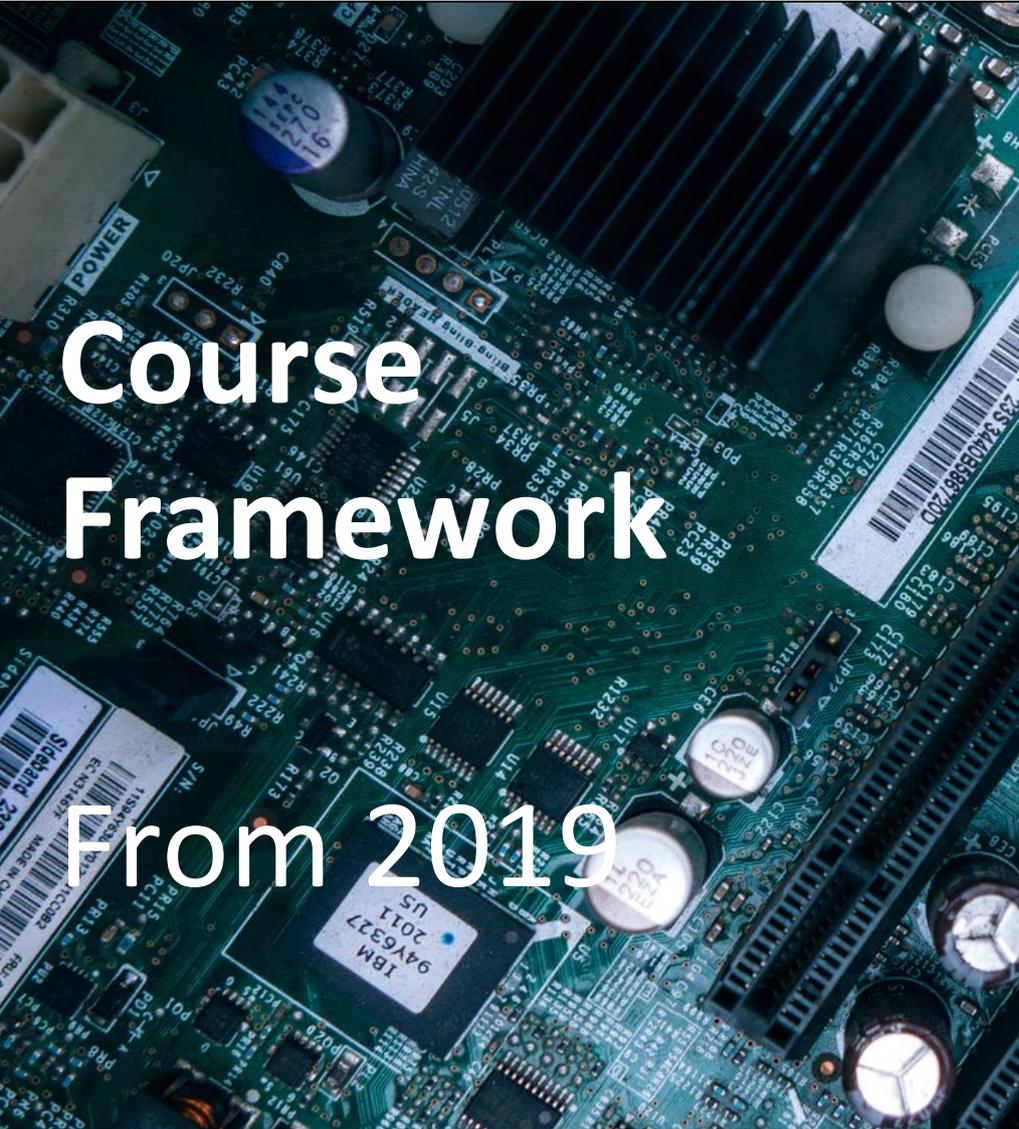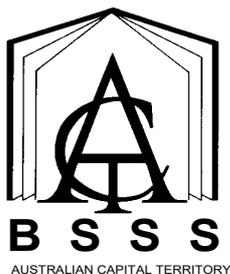# Technologies

Course Framework

From 2019

Technologies Framework

Introduction

All courses of study for the ACT Senior Secondary Certificate should enable students to develop essential capabilities for twenty-first century learners. These 'capabilities' comprise an integrated and interconnected set of knowledge, skills, behaviours and dispositions that students develop and use in their learning across the curriculum.

The capabilities include:

- literacy
- numeracy
- information and communication technology (ICT)
- critical and creative thinking
- personal and social
- ethical behaviour
- intercultural understanding.

Courses of study for the ACT Senior Secondary Certificate should be both relevant to the lives of students and incorporate the contemporary issues they face. Hence, courses address the following three priorities. These priorities are:

- Aboriginal and Torres Strait Islander histories and cultures
- Asia and Australia's engagement with Asia
- Sustainability.

Elaboration of these student capabilities and priorities are available on the ACARA website.
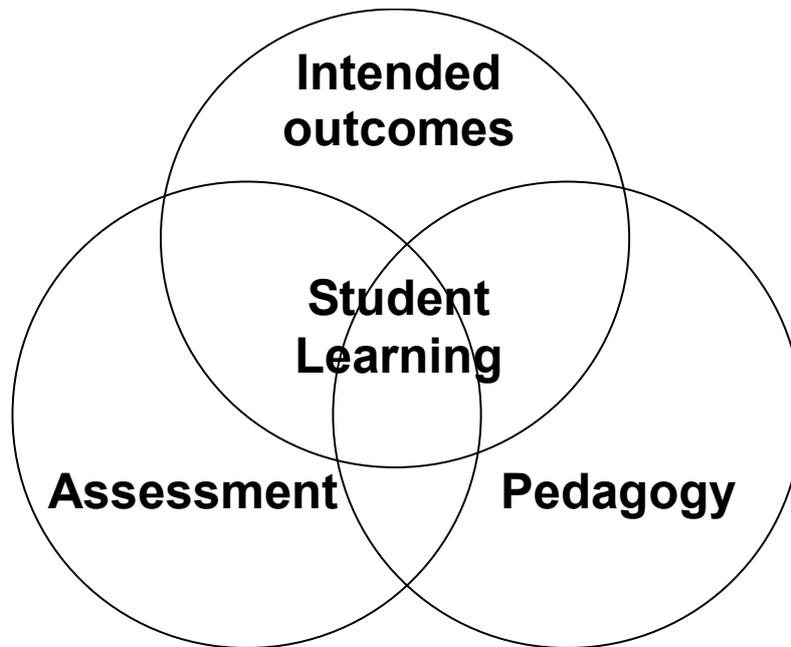
Frameworks

Frameworks make provision for development of courses with their own discrete knowledge, symbols, language, processes and skills. In addition, frameworks will also make provision for courses that draw knowledge, symbols, languages, processes and skills across or within disciplines.

Frameworks provide the basis for the development and accreditation of any course and provide a common basis for the assessment, moderation and reporting of student outcomes in courses based on the Framework.

Frameworks support a model of learning that integrates intended student outcomes, pedagogy and assessment. This model is underpinned by a set of beliefs and a set of learning principles.

Table of Contents

Underpinning beliefs

- All students are able to learn.
- Learning is a partnership between students and teachers.
- Teachers are responsible for advancing student learning.

Learning principles

- Learning builds on existing knowledge, understandings and skills.

  (Prior knowledge)

- When learning is organised around major concepts, principles and significant real world issues, within and across disciplines, it helps students make connections and build knowledge structures.

  (Deep knowledge and connectedness)

- Learning is facilitated when students actively monitor their own learning and consciously develop ways of organising and applying knowledge within and across contexts.

  (Metacognition)

- Learners' sense of self and motivation to learn affects learning.

  (Self-concept)

- Learning needs to take place in a context of high expectations.

  (High expectations)

- Learners learn in different ways and at different rates.

  (Individual differences)

- Different cultural environments, including the use of language, shape learner' understandings and the way they learn.

  (Socio-cultural effects)

- Learning is a social and collaborative function as well as an individual one.

  (Collaborative learning)

- Learning is strengthened when learning outcomes and criteria for judging learning are made explicit and when students receive frequent feedback on their progress.

  (Explicit expectations and feedback)

Rationale

Technologies enrich and impact the lives of people and societies globally. Australia needs enterprising individuals who can make discerning decisions about the development and use of technologies and who can independently and collaboratively develop solutions to complex challenges and contribute to sustainable patterns of living. Technologies play an important role in transforming, restoring and sustaining societies and natural, managed and constructed environments.

Technologies enable students to become creative and responsive designers. When students consider the ethical, legal, aesthetic and functional factors combined with the economic, environmental and social impacts of technological change, they are developing the knowledge, understanding and skills enabling them to become discerning decision-makers. Students will also be able to understand how the selection and use of technologies contributes to a sustainable and improved future. Students studying technologies will learn about the design process and its application. Students will develop research skills, computational thinking and a range of communication skills. They will refine their interpersonal and intrapersonal skills including collaboration, project management and be able to reflect on their own learning. Students will have opportunities to use design thinking and apply creativity through structured, collaborative and project based learning, solve problems, develop practical skills and apply critical thinking in the development of new ideas.

Students will consider and use global perspectives, identify ethical issues related to the technologies in relevant industries and the sustainability of solutions as they manage projects from beginning to end. Students have the opportunity to demonstrate enterprise thinking, make connections with industry and develop real world innovative solutions for stakeholders. They will use critical and creative thinking to address a need, problem or challenge. The study of technologies offers a platform for making connections with other disciplines.

Students will manage projects independently and collaboratively from conception to realisation. They will apply design and systems thinking and design processes to investigate, generate and refine ideas, plan, produce and evaluate design solutions. They will develop a sense of pride, satisfaction and enjoyment from their ability to develop innovative design products, services and environments.

Students will demonstrate knowledge of research, skills of ideation and design, prototyping production, solution testing and communication of their understanding. Technologies promotes deep learning, creativity and innovation.

Goals

All courses based on this framework should enable students to:
- analyse problems or challenges to determine needs for solutions or products
- apply the process of design (investigate, design, plan, manage, create, evaluate solutions)
- use critical and creative thinking to design innovative solutions
- produce or create solutions or products to address a need, problem or challenge
- evaluate and use technologies in a range of contexts
- demonstrate problem solving skills
- communicate to different audiences using a range of methods
- engage confidently with and responsibly select and manipulate appropriate technologies – materials, data, systems, tools and equipment

Concepts, Knowledge and Skills

Courses developed under this framework provide details of course content through the component units of the course. While this content will differ according to the particular course, all content will be chosen to enable students to work towards the achievement of the common and agreed goals of the Framework.

- the design process
- critical and creative thinking
- systems thinking
- futures thinking
- project management
- synthesise information
- evaluates properties of materials or systems
- discipline and industry theory, practices, processes, concepts and procedures
- technical information and metalanguage
- Workplace Health and Safety (WHS).
- creating design solutions
- analysing and evaluating
- problem solving
- decision making
- reflecting on own learning
- applying literacy and numeracy
- using materials and equipment
- interpersonal and intrapersonal strategies
- communicating.

Teaching Strategies

Course developers are encouraged to outline teaching strategies that are grounded in the learning principles and encompass quality teaching. Pedagogical techniques and assessment tasks should promote intellectual quality, establish a rich learning environment and generate relevant connections between learning and life experiences.

Assessment

The identification of assessment criteria and assessment tasks types and weightings provide a common and agreed basis for the collection of evidence of student achievement.

Assessment Criteria (the dimensions of quality that teachers look for in evaluating student work) provide a common and agreed basis for judgement of performance against unit and course goals, within and across colleges. Over a course, teachers must use all of these criteria to assess students' performance, but are not required to use all criteria on each task. Assessment criteria are to be used holistically on a given task and in determining the unit grade.

Assessment Tasks elicit responses that demonstrate the degree to which students have achieved the goals of a unit based on the assessment criteria. The Common Curriculum Elements (CCE) is a guide to developing assessment tasks that promote a range of thinking skills (see appendix A). It is highly desirable that assessment tasks engage students in demonstrating higher order thinking.

Rubrics use the assessment criteria relevant for a particular task and can be used to assess a continuum that indicates levels of student performance against each criterion.

Assessment Criteria

Students will be assessed on the degree to which they demonstrate:

- knowledge and understanding
- skills.

Assessment Task Types

	Design Process	Design Solution(s)
	Suggested tasks: • design development • design documentation • essay • extended response • oral presentation • podcast • portfolio (design process) • project management • report • research task • return brief • review • seminar • short response • storyboard • web portfolio • workshop	**Suggested tasks:** • digital artefact • digital asset • major project • network • portfolio • product • prototyping • software application • storyboard • website
Weightings in A/V 1.0 and 0.5 Units	30 - 70%	30 - 70%
Weightings in T/V 1.0 and 0.5 Units	40 - 60%	40 - 60%
Weighting in M/V 1.0 and 0.5 Units	30 - 70%	30 - 70%

Additional Assessment Advice

- For a standard unit (1.0), students must complete a minimum of three assessment tasks and a maximum of five.
- For a half standard unit (0.5), students must complete a minimum of two and a maximum of three assessment tasks.

Achievement Standards

Student achievement in **A, T** and **M** units is reported based on system standards as an A - E grade. Grade descriptors and standard work samples where available, provide a guide for teacher judgement of students' achievement over the unit.

Grades are awarded on the proviso that the assessment requirements have been met. Teachers will consider, when allocating grades, the degree to which students demonstrate their ability to complete and submit tasks within a specified time frame.

Achievement Standards Technologies A Course Year 11

	A student who achieves an **A** grade typically	A student who achieves a **B** grade typically	A student who achieves a **C** grade typically	A student who achieves a **D** grade typically	A student who achieves an **E** grade typically
Knowledge and understanding	• analyses the design process and explains decision making	• explains the design process and describes decision making	• describes the design process with reference to decision making	• identifies major features of the design process with little reference to decision making	• identifies some features of the design process
	• analyses technology concepts and principles and explains the properties of materials or data or systems to address a need, problem or challenge	• explains technology concepts and principles and describes the properties of materials or data or systems to address a need, problem or challenge	• describes technology concepts and principles with some reference to properties of materials or data or systems to address a need, problem or challenge	• identifies major technology concepts and principles with some reference to properties of materials or data or systems to address a need, problem or challenge	• identifies few technology concepts and principles with minimal reference to properties of materials or data or systems to address a need, problem or challenge
	• analyses technologies, explains ethical and sustainable application	• explains technologies describes ethical and sustainable application	• describes technologies with some reference to ethical and sustainable application	• identifies major features of technologies with little reference to ethical and sustainable application	• identifies some features of technologies with no reference to ethical and sustainable application
	• thinks critically, drawing on data and information to solve complex problems and analyses opportunities for application of technology	• thinks critically, drawing on data and information to solve problems and explains opportunities for application of technology	• draws on data and information to solve problems and describes opportunities for application of technology	• identifies some opportunities for application of technology with limited use of information and data	• identifies some opportunities for application of technology with little evidence of use of information and data
Skills	• applies technology concepts, strategies and methodologies with control and precision demonstrating understanding of the historical and cultural context and its impact	• applies technology concepts, strategies and methodologies with control demonstrating understanding of the historical and cultural context and its impact	• applies technology concepts, strategies and methodologies with some control demonstrating understanding of context and its impact	• applies technology concepts, strategies and methodologies with minimal control demonstrating understanding of its impact	• applies technology concepts, strategies and methodologies with limited control demonstrating little evidence of understanding its impact
	• creates innovative and high-quality design solutions/products using techniques and approaches and justifies ideas coherently	• creates innovative and high-quality design solutions/products using techniques and approaches and justifies ideas coherently	• creates design solutions/products using techniques and approaches and explains ideas	• creates design solutions/products using some techniques and approaches and describes ideas	• creates design solutions/products using some techniques and approaches and description of ideas
	• critically analyses potential prototypes and solutions evaluating their appropriateness and effectiveness via iterative improvement and review	• analyses potential prototypes and solutions evaluating their appropriateness and effectiveness via iterative improvement and review	• explains potential prototypes and solutions evaluating their appropriateness and effectiveness via iterative improvement and review	• describes analyses potential prototypes and solutions evaluating their appropriateness and effectiveness via iterative improvement and review	• identifies potential prototypes and solutions with little or no reference to their appropriateness and effectiveness via iterative improvement and review
	• communicates complex ideas and insights effectively in a range of mediums and justifies ideas coherently using appropriate evidence, metalanguage and accurate referencing	• communicates ideas effectively in a range of mediums and justifies ideas coherently using appropriate evidence, metalanguage and referencing	• communicates ideas appropriately in mediums and explains ideas coherently using appropriate evidence, metalanguage and referencing	• communicates ideas in mediums and describes ideas with some use of appropriate evidence with minimal use metalanguage and referencing	• communicates basic ideas in few mediums and describes ideas with little or no use of appropriate evidence and referencing
	• reflects with insight on their own thinking and evaluates inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively	• reflects on their own thinking and analyses inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively	• reflects on their own thinking and explains inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively	• reflects on their own thinking with some reference to planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively	• reflects on their own thinking with little or no reference to planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively

Achievement Standards Technologies T Course Year 11

	*A student who achieves an **A** grade typically*	*A student who achieves a **B** grade typically*	*A student who achieves a **C** grade typically*	*A student who achieves a **D** grade typically*	*A student who achieves an **E** grade typically*
Knowledge and understanding	• critically analyses the design process and evaluates constraints and implications for decision making • synthesises technology theories, concepts and principles and evaluates the properties of materials or data or systems to address a need, problem or challenge • critically analyses technologies and evaluates ethical and sustainable application of technology • thinks critically and creatively, drawing on data and information to solve complex problems	• analyses the design process and explains constraints and implications for decision making • analyses technology theories, concepts and principles and explains the properties of materials or data or systems to address a need, problem or challenge • analyses technologies and explains ethical and sustainable application of technology • thinks critically, drawing on data and information to solve complex problems	• explains the design process and describes constraints and implications for decision making • explains technology theories, concepts and principles and describes the properties of materials or data or systems to address a need, problem or challenge • explains technologies and describes ethical and sustainable application of technology • thinks critically, drawing on data and information to solve problems	• describes the design process with some reference to constraints and implications for decision making • describes technology theories, concepts and principles with some reference to properties of materials or data or systems to address a need, problem or challenge • describes technologies with some reference to ethical and sustainable application of technology • draws on data and information to solve problems and describes opportunities	• identifies features of the design process with little or no reference to decision making • identifies technology theories, concepts and principles with some reference to properties of materials or data or systems to address a need, problem or challenge • identifies some features of technologies with little or no reference to ethical and sustainable application of technology • applying limited use of information and data
Skills	• applies technology concepts, strategies and methodologies with control and precision demonstrating understanding of the historical and cultural context and its impact • creates innovative and high quality design solutions/products using techniques and approaches and justifies ideas coherently • critically analyses potential prototypes and solutions evaluating their appropriateness and effectiveness via iterative improvement and review • communicates complex ideas and insights effectively in a range of mediums to a variety of audiences using appropriate evidence, metalanguage and accurate referencing • reflects with insight on their own thinking and that of others and evaluates inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies and capacity to work independently and collaboratively	• applies technology concepts, strategies and methodologies with control demonstrating understanding of the historical and cultural context and its impact • creates innovative and quality design solutions/products using techniques and approaches and justifies ideas coherently • analyses potential prototypes and solutions explaining their appropriateness and effectiveness via iterative improvement and review • communicates ideas effectively in a range of mediums to a variety of audiences using appropriate evidence, metalanguage and accurate referencing • reflects on their own thinking and analyses inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies and capacity to work independently and collaboratively	• applies technology concepts, strategies and methodologies with some control demonstrating understanding of context and its impact • creates quality design solutions/products using techniques and approaches and justifies ideas coherently • explains potential prototypes and solutions describing their appropriateness and effectiveness via iterative improvement and review • communicates ideas appropriately in a range of mediums to a variety of audiences using appropriate evidence, metalanguage and accurate referencing • reflects on their own thinking and explains inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies and capacity to work independently and collaboratively	• applies technology concepts, strategies and methodologies with minimal control demonstrating understanding of its impact • creates design solutions/products using some techniques and approaches and explains ideas • describes Analyses potential prototypes and solutions with some reference to their appropriateness and effectiveness via iterative improvement and review • communicates ideas in mediums to a variety of audiences using some evidence, metalanguage and referencing • reflects on their own thinking with some reference to inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies and capacity to work independently and collaboratively	• applies technology concepts, strategies and methodologies with limited control demonstrating little evidence of understanding its impact • plans design solutions/products using some techniques and approaches and describes ideas • identifies potential prototypes and solutions with little or no reference to their appropriateness and effectiveness via iterative improvement and review • communicates basic ideas in mediums to a variety of audiences using minimal evidence, metalanguage and some referencing • reflects on their own thinking with little or no reference to planning, time management, use of appropriate techniques and strategies and capacity to work independently and collaboratively

Achievement Standards Technologies A Course Year 12

	A student who achieves an **A** grade typically	A student who achieves a **B** grade typically	A student who achieves a **C** grade typically	A student who achieves a **D** grade typically	A student who achieves an **E** grade typically
Knowledge and understanding	• analyses the design process and explains opportunities, constraints and implications for decision making • analyses technology theories, concepts and principles and explains the properties of materials or data or systems to address a need, problem or challenge • analyses technologies in a range of contexts and explains ethical and sustainable application • thinks critically, drawing on data and information to solve complex problems and analyses opportunities for application of technology	• explains the design process and describes opportunities, constraints and implications for decision making • explains technology theories, concepts and principles and describes the properties of materials or data or systems to address a need, problem or challenge • explains technologies in a range of contexts and describes ethical and sustainable application • thinks critically, drawing on data and information to solve problems and explains opportunities for application of technology	• describes the design process with reference to opportunities, constraints and implications for decision making • describes technology theories, concepts and principles with some reference to properties of materials or data or systems to address a need, problem or challenge • describes technologies in a range of contexts with some reference to ethical and sustainable application • draws on data and information to solve problems and describes opportunities for application of technology	• identifies major features of the design process with little reference to opportunities, constraints and implications for decision making • identifies major technology theories, concepts and principles with some reference to properties of materials or data or systems to address a need, problem or challenge • identifies major features of technologies with little reference to ethical and sustainable application • identifies some opportunities for application of technology with limited use of information and data	• identifies some features of the design process with minimal understanding of opportunities, constraints and implications • identifies few technology theories, concepts and principles with minimal reference to properties of materials or data or systems to address a need, problem or challenge • identifies some features of technologies with no reference to ethical and sustainable application • identifies some opportunities for application of technology with little evidence of use of information and data
Skills	• applies technology concepts, strategies and methodologies with control and precision demonstrating understanding of the historical and cultural context and its impact • creates innovative and high-quality design solutions/products using techniques and approaches and justifies ideas coherently • critically analyses potential prototypes and solutions evaluating their appropriateness and effectiveness via iterative improvement and review • communicates complex ideas and insights effectively in a range of mediums and justifies ideas coherently using appropriate evidence, metalanguage and accurate referencing • reflects with insight on their own thinking and evaluates inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively	• applies technology concepts, strategies and methodologies with control demonstrating understanding of the historical and cultural context and its impact • creates quality design solutions/products using techniques and approaches and explains ideas coherently • analyses potential prototypes and solutions evaluating their appropriateness and effectiveness via iterative improvement and review • communicates ideas effectively in a range of mediums and justifies ideas coherently using appropriate evidence, metalanguage and referencing • reflects on their own thinking and analyses inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively	• applies technology concepts, strategies and methodologies with some control demonstrating understanding of context and its impact • creates design solutions/products using some techniques and approaches and explains ideas • explains potential prototypes and solutions evaluating their appropriateness and effectiveness via iterative improvement and review • communicates ideas appropriately in mediums and explains ideas coherently using appropriate evidence, metalanguage and referencing • reflects on their own thinking explains inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively	• applies technology concepts, strategies and methodologies with minimal control demonstrating understanding of its impact • creates design solutions/products using some techniques and approaches and describes ideas • describes analyses potential prototypes and solutions evaluating their appropriateness and effectiveness via iterative improvement and review • communicates ideas in mediums and describes ideas with some use of appropriate evidence with minimal use metalanguage and referencing • reflects on their own thinking with some reference to planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively	• applies technology concepts, strategies and methodologies with limited control demonstrating little evidence of understanding its impact • creates design solutions/products using some techniques and approaches and description of ideas • identifies potential prototypes and solutions with little or no reference to their appropriateness and effectiveness via iterative improvement and review • communicates basic ideas in few mediums and describes ideas with little or no use of appropriate evidence and referencing • reflects on their own thinking with little or no reference to planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively

Achievement Standards Technologies T Course Year 12

	A student who achieves an **A** grade typically	A student who achieves a **B** grade typically	A student who achieves a **C** grade typically	A student who achieves a **D** grade typically	A student who achieves an **E** grade typically
Knowledge and understanding	• critically analyses the design process and evaluates opportunities, constraints and implications for decision making • critically analyses strategies, methodologies and procedures and evaluates their validity and reliability • synthesises technology theories, concepts and principles and evaluates the properties of material or data or systems to address a need, problem or challenge • critically analyses technologies in a range of contexts and evaluates ethical and sustainable application of technology • thinks critically and creatively, drawing on data and information to solve complex problems and evaluates opportunities for application of technology	• analyses the design process and explains opportunities, constraints and implications for decision making • analyses strategies, methodologies and procedures and explains their validity and reliability • analyses technology theories, concepts and principles and explains the properties of materials or data or systems to address a need, problem or challenge • analyses technologies in a range of contexts and explains ethical and sustainable application of technology • thinks critically, drawing on data and information to solve complex problems and analyses opportunities for application of technology	• explains the design process and describes opportunities, constraints and implications for decision making • explains strategies, methodologies and procedures and describes their validity and reliability • explains technology theories, concepts and principles and describes the properties of materials or data or systems to address a need, problem or challenge • explains technologies in a range of contexts and describes ethical and sustainable application of technology • thinks critically, drawing on data and information at times to solve problems and explains opportunities for application of technology	• describes the design process with some reference to opportunities, constraints and implications for decision making • describes strategies, methodologies and procedures with some reference to validity and reliability • describes technology theories, concepts and principles with some reference to properties of materials or data or systems to address a need, problem or challenge • describes technologies in a range of contexts with some reference to ethical and sustainable application of technology • draws on data and information at times to solve problems and describes opportunities for application of technology	• identifies features of the design process with little or no reference to decision making • identifies some strategies, methodologies and procedures with little reference to validity and reliability • identifies technology theories, concepts and principles with some reference to properties of materials or data or systems to address a need, problem or challenge • identifies some features of technologies in a range of contexts with little or no reference to ethical and sustainable application of technology • identifies some opportunities for application of technology with limited use of information and data
Skills	• applies technology concepts, strategies and methodologies demonstrating an understanding of the historical and cultural context and impact on individuals, groups, communities and society • creates innovative and high quality design solutions/products using techniques and approaches and justifies ideas coherently • critically analyses potential prototypes and solutions evaluating their appropriateness and effectiveness via iterative improvement and review • communicates complex ideas and insights effectively in a range of mediums to a variety of audiences using appropriate evidence, metalanguage and accurate referencing • reflects with insight on their own thinking and that of others and evaluates inter and intrapersonal skills including planning, time management, use of appropriate techniques & strategies and capacity to work independently and collaboratively	• applies technology concepts, strategies and methodologies with control demonstrating understanding of the historical and cultural context and impact on individuals, groups, communities and society • creates innovative and quality design solutions/products using techniques and justifies ideas coherently • analyses potential prototypes and solutions explaining their appropriateness and effectiveness via iterative improvement and review • communicates ideas effectively in a range of mediums to a variety of audiences using appropriate evidence, metalanguage and accurate referencing • reflects on their own thinking and that of others and analyses inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively	• applies technology concepts, strategies and methodologies with some control demonstrating understanding of context and the impact on individuals, groups, communities and society • creates quality design solutions/products using techniques and justifies ideas coherently • explains potential prototypes and solutions describing their appropriateness and effectiveness via iterative improvement and review • communicates ideas appropriately in a range of mediums to a variety of audiences using appropriate evidence, metalanguage and accurate referencing • reflects on their own thinking and that of others and explains inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively	• applies technology concepts, strategies and methodologies with minimal control demonstrating understanding of the impact on individuals, groups, communities and society • creates design solutions/products using some techniques and explains ideas • describes analyses potential prototypes and solutions with some reference to their appropriateness and effectiveness via iterative improvement and review • communicates ideas in mediums to a variety of audiences using some evidence, metalanguage and referencing • reflects on their own thinking with some reference to inter and intrapersonal skills including planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively	• applies technology concepts, strategies and methodologies with limited control demonstrating little evidence of understanding of the impact on individuals, groups, communities and society • plans design solutions/products using some techniques and describes ideas • identifies potential prototypes and solutions with little or no reference to their appropriateness and effectiveness via iterative improvement and review • communicates basic ideas in mediums to a variety of audiences using minimal evidence, metalanguage and some referencing • reflects on their own thinking with little or no reference to planning, time management, use of appropriate techniques and strategies and capacity to work both independently and collaboratively

Achievement Standards Technologies M Course

	A student who achieves an **A** grade typically	A student who achieves a **B** grade typically	A student who achieves a **C** grade typically	A student who achieves a **D** grade typically	A student who achieves an **E** grade typically
Knowledge and understanding	• describes and uses the design process and procedures with independence • describes practical techniques and materials required to address a need or solve a problem with independence	• describes and uses the design process and procedures with some assistance • describes practical techniques and materials required to address a need or solve a problem with some assistance	• recounts design procedures used with assistance • recounts practical techniques and materials used to solve a problem with assistance	• identifies design procedures with continuous guidance • uses practical techniques and materials required with continuous guidance	• identifies design procedures with direct instruction • identifies practical techniques and materials with direct instruction
Skills	• communicates ideas using appropriate terminology • makes discerning choice of strategies and procedures to use technology with independence • demonstrates interpersonal and intrapersonal skills in a range of technology contexts always • plans and undertakes independent inquiries with independence • create design solutions/products with independence	• communicates ideas using appropriate terminology with some assistance • selects strategies and procedures to use technology with some assistance • demonstrates interpersonal and intrapersonal skills in a range of technology contexts frequently • plans and undertakes independent inquiries with some assistance • create design solutions/products with some assistance	• communicates ideas using appropriate, terminology with assistance • selects strategies and procedures to use technology with assistance • demonstrates interpersonal and intrapersonal skills in technology contexts, usually • undertakes guided inquiries with assistance • create design solutions/products with assistance	• communicates ideas using appropriate, terminology with continuous guidance • selects strategies and procedures to use technology with continuous guidance • demonstrates interpersonal and intrapersonal skills in technology contexts sometimes • undertakes guided inquiries with continuous guidance • create design solutions/products with continuous guidance	• communicates ideas using appropriate terminology with direct instruction • selects strategies and procedures to use technology with direct instruction • demonstrates interpersonal and intrapersonal skills in technology contexts seldom • undertakes simple research on a topic with direct instruction • create design solutions/products with direct instruction

Moderation

Moderation is a system designed and implemented to:

- provide comparability in the system of school-based assessment
- form the basis for valid and reliable assessment in senior secondary schools
- involve the ACT Board of Senior Secondary Studies and colleges in cooperation and partnership
- maintain the quality of school-based assessment and the credibility, validity and acceptability of Board certificates.

Moderation commences within individual colleges. Teachers develop assessment programs and instruments, apply assessment criteria, and allocate Unit Grades, according to the relevant Course Framework. Teachers within course teaching groups conduct consensus discussions to moderate marking or grading of individual assessment instruments and unit grade decisions.

The Moderation Model

Moderation within the ACT encompasses structured, consensus-based peer review of Unit Grades for all accredited courses, as well as statistical moderation of course scores, including small group procedures, for 'T' courses.

Moderation by Structured, Consensus-based Peer Review

Review is a subcategory of moderation, comprising the review of standards and the validation of Unit Grades. In the review process, Unit Grades, determined for Year 11 and Year 12 student assessment portfolios that have been assessed in schools by teachers under accredited courses, are moderated by peer review against system wide criteria and standards. This is done by matching student performance with the criteria and standards outlined in the unit grade descriptors as stated in the Course Framework. Advice is then given to colleges to assist teachers with, and/or reassure them on, their judgements.

Preparation for Structured, Consensus-based Peer Review

Each year, teachers teaching a Year 11 class are asked to retain originals or copies of student work completed in Semester 2. Similarly, teachers teaching a Year 12 class should retain originals or copies of student work completed in Semester 1. Assessment and other documentation required by the Office of the Board of Senior Secondary Studies should also be kept. Year 11 work from Semester 2 of the previous year is presented for review at Moderation Day 1 in March, and Year 12 work from Semester 1 is presented for review at Moderation Day 2 in August.

In the lead up to Moderation Day, a College Course Presentation (comprised of a document folder and a set of student portfolios) is prepared for each A and T course and any M units offered by the school, and is sent in to the Office of the Board of Senior Secondary Studies.

Teachers of C courses are required to present portfolios of student work for verification that units are taught and assessed as documented and validation that assessments meet industry standards. The Moderation Officer will report any concerns to the Board.

The College Course Presentation

The package of materials (College Course Presentation) presented by a college for review on moderation days in each course area will comprise the following:

- a folder containing supporting documentation as requested by the Office of the Board through memoranda to colleges
- a set of student portfolios containing marked and/or graded written and non-written assessment responses on which the unit grade decision has been made is to be included in the student review portfolios.

Specific requirements for subject areas and types of evidence to be presented for each moderation day will be outlined by the Board Secretariat through memoranda and Information Papers.

References

The following references were used to inform the development of the Technologies:

ACARA

Shape of Australian Curriculum - Technologies at: https://www.acara.edu.au/news-and-media/publications

QSA

Course available at https://www.qcaa.qld.edu.au/

SACE

Subject Outline: https://www.sace.sa.edu.au/

VCE

Courses available at http://www.vcaa.vic.edu.au/Pages/vce/studies/index.aspx

WACE

Course available at http://www.scsa.wa.edu.au/

Framework Group

Name	College
Juliet Harris	Canberra Girls Grammar School
David Kurthi	Daramalan College
Bruce Fuda	Gungahlin College
Terence Pereira	Marist College
Vandana Harnal	Melba Copland Secondary School
Corinne Preston	Merici College
Juliette Major	St Clare's College

Appendix A - Common Curriculum Elements

Common Curriculum Elements assist in the development of high quality assessment tasks by encouraging breadth and depth and discrimination in levels of achievement.

Organisers	Elements	Examples
create, compose and apply	apply	ideas and procedures in unfamiliar situations, content and processes in non-routine settings
	compose	oral, written and multimodal texts, music, visual images, responses to complex topics, new outcomes
	represent	images, symbols or signs
	create	creative thinking to identify areas for change, growth and innovation, recognise opportunities, experiment to achieve innovative solutions, construct objects, imagine alternatives
	manipulate	images, text, data, points of view
analyse, synthesise and evaluate	justify	arguments, points of view, phenomena, choices
	hypothesise	statement/theory that can be tested by data
	extrapolate	trends, cause/effect, impact of a decision
	predict	data, trends, inferences
	evaluate	text, images, points of view, solutions, phenomenon, graphics
	test	validity of assumptions, ideas, procedures, strategies
	argue	trends, cause/effect, strengths and weaknesses
	reflect	on strengths and weaknesses
	synthesise	data and knowledge, points of view from several sources
	analyse	text, images, graphs, data, points of view
	examine	data, visual images, arguments, points of view
	investigate	issues, problems
organise, sequence and explain	sequence	text, data, relationships, arguments, patterns
	visualise	trends, futures, patterns, cause and effect
	compare/contrast	data, visual images, arguments, points of view
	discuss	issues, data, relationships, choices/options
	interpret	symbols, text, images, graphs
	explain	explicit/implicit assumptions, bias, themes/arguments, cause/effect, strengths/weaknesses
	translate	data, visual images, arguments, points of view
	assess	probabilities, choices/options
	select	main points, words, ideas in text
identify, summarise and plan	reproduce	information, data, words, images, graphics
	respond	data, visual images, arguments, points of view
	relate	events, processes, situations
	demonstrate	probabilities, choices/options
	describe	data, visual images, arguments, points of view
	plan	strategies, ideas in text, arguments
	classify	information, data, words, images
	identify	spatial relationships, patterns, interrelationships
	summarise	main points, words, ideas in text, review, draft and edit

Appendix B - Glossary of Verbs

Verbs	Definition
Analyse	Consider in detail for the purpose of finding meaning or relationships, and identifying patterns, similarities and differences
Apply	Use, utilise or employ in a particular situation
Argue	Give reasons for or against something
Assess	Make a Judgement about the value of
Classify	Arrange into named categories in order to sort, group or identify
Compare	Estimate, measure or note how things are similar or dissimilar
Compose	The activity that occurs when students produce written, spoken, or visual texts
Contrast	Compare in such a way as to emphasise differences
Create	Bring into existence, to originate
Demonstrate	Give a practical exhibition an explanation
Describe	Give an account of characteristics or features
Discuss	Talk or write about a topic, taking into account different issues or ideas
Evaluate	Examine and judge the merit or significance of something
Examine	Determine the nature or condition of
Explain	Provide additional information that demonstrates understanding of reasoning and /or application
Extrapolate	Infer from what is known
Hypothesise	Put forward a supposition or conjecture to account for certain facts and used as a basis for further investigation by which it may be proved or disproved
Identify	Recognise and name
Interpret	Draw meaning from
Investigate	Plan, inquire into and draw conclusions about
Justify	Show how argument or conclusion is right or reasonable
Manipulate	Adapt or change
Plan	Strategies, develop a series of steps, processes
Predict	Suggest what might happen in the future or as a consequence of something
Reflect	The thought process by which students develop an understanding and appreciation of their own learning. This process draws on both cognitive and affective experience
Relate	Tell or report about happenings, events or circumstances
Represent	Use words, images, symbols or signs to convey meaning
Reproduce	Copy or make close imitation
Respond	React to a person or text
Select	Choose in preference to another or others
Sequence	Arrange in order
Summarise	Give a brief statement of the main points
Synthesise	Combine elements (information/ideas/components) into a coherent whole
Test	Examine qualities or abilities
Translate	Express in another language or form, or in simpler terms
Visualise	The ability to decode, interpret, create, question, challenge and evaluate texts that communicate with visual images as well as, or rather than, words