Information & Communication Technology 2024 v1.1

Applied senior syllabus

Queensland Government | Queensland Curriculum & Assessment Authority

For all Queensland schools

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1 Queensland syllabuses for senior subjects

In Queensland, a syllabus for a senior subject is an official 'map' of a senior school subject. A syllabus's function is to support schools in delivering the Queensland Certificate of Education (QCE) system through high-quality and high-equity curriculum and assessment.

Syllabuses are based on design principles developed from independent international research about how excellence and equity are promoted in the documents teachers use to develop and enliven the curriculum.

Syllabuses for senior subjects build on student learning in the Prep to Year 10 Australian Curriculum and include General, General (Extension), Senior External Examination (SEE), Applied, Applied (Essential) and Short Course syllabuses.

More information about syllabuses for senior subjects is available at www.qcaa.qld.edu.au/senior/senior-subjects. and in the 'Queensland curriculum' section of the *QCE and QCIA policy and procedures handbook*.

Teaching, learning and assessment resources will support the implementation of a syllabus for a senior subject. More information about professional resources for senior syllabuses is available on the QCAA website and via the QCAA Portal.

2 Course overview

2.1 Rationale

Technologies are an integral part of society as humans seek to create solutions to improve their own and others' quality of life. Technologies affect people and societies by transforming, restoring and sustaining the world in which we live. In an increasingly technological and complex world, it is important to develop the knowledge, understanding and skills associated with information technology to support a growing need for digital literacy and specialist information and communication technology skills in the workforce. Across business, industry, government, education and leisure sectors, rapidly changing industry practices and processes create corresponding vocational opportunities in Australia and around the world.

Information & Communication Technology includes the study of industry practices and ICT processes through students' application in and through a variety of industry-related learning contexts. Industry practices are used by enterprises to manage ICT product development processes to ensure high-quality outcomes, with alignment to relevant local and universal standards and requirements. Students engage in applied learning to demonstrate knowledge, understanding and skills in units that meet local needs, available resources and teacher expertise. Through both individual and collaborative learning experiences, students learn to meet client expectations and product specifications.

Applied learning supports students' development of transferable 21st century, literacy and numeracy skills relevant to information and communication technology sectors and future employment opportunities. Students learn to interpret client briefs and technical information, and select and demonstrate skills using hardware and software to develop ICT products. The majority of learning is done through prototyping tasks that relate to business and industry, and that promote adaptable, competent, self-motivated and safe individuals who can work with colleagues to solve problems and complete practical work.

2.2 Syllabus objectives

The syllabus objectives outline what students have the opportunity to learn.

1. **Demonstrate practices, skills and processes.**

   Students identify and reproduce fundamental industry skills in ICT tasks related to enterprises, workplace health and safety, ethical use, security, product quality and hardware and software tools.

2. **Interpret client briefs and technical information.**

   Students use knowledge of industry practices and processes to determine the purpose of ICT products, including product specifications and features.

3. **Select practices and processes.**

   Students choose knowledge and skills in ICT tasks. Knowledge and skills relate to enterprises, workplace health and safety, ethical use, security, product quality and hardware and software tools.

4. **Sequence processes.**

   Students decide on the combination and order of processes to develop ICT products. Students consider specifications, hardware and software requirements, ethical use, security, and safety of users to sequence processes to industry standards.

5. **Evaluate processes and products.**

   Students examine selected processes to determine their merit, value, or significance in relation to product specifications. They appraise products by testing effectiveness and suitability, assessing strengths, implications and limitations using specifications and industry standards.

6. **Adapt processes and products.**

   Students modify and improve processes and products based on identified strengths, implications and limitations, including amendments to hardware and software, product elements and components to improve alignment with client briefs, conventions and standards required in an industry-specific ICT task.

2.3 Designing a course of study in Information & Communication Technology

Syllabuses are designed for teachers to make professional decisions to tailor curriculum and assessment design and delivery to suit their school context and the goals, aspirations and abilities of their students within the parameters of Queensland's senior phase of learning.

The syllabus is used by teachers to develop curriculum for their school context. The term *course of study* describes the unique curriculum and assessment that students engage with in each school context. A course of study is the product of a series of decisions made by a school to select, organise and contextualise subject matter, integrate complementary and important learning, and create assessment tasks in accordance with syllabus specifications.

It is encouraged that, where possible, a course of study is designed such that teaching, learning and assessment activities are integrated and enlivened in an authentic setting.

2.3.1 Course structure

Information & Communication Technology is an Applied senior syllabus. It contains at least four QCAA-developed units from which schools develop their course of study.

Each unit has been developed with a notional time of 55 hours of teaching and learning, including assessment.

Schools select four units from the unit options provided. They decide the order in which the units will be delivered. Once these decisions have been made, the four units selected and their order of implementation determine which units are considered Units 1–4.

Students should complete Unit 1 and Unit 2 before beginning Units 3 and 4. Units 3 and 4 are studied as a pair.

More information about the requirements for administering senior syllabuses is available in the 'Queensland curriculum' section of the *QCE and QCIA policy and procedures handbook*.

2.3.2 Curriculum

Senior syllabuses set out only what is essential while being flexible so teachers can make curriculum decisions to suit their students, school context, resources and expertise.

Within the requirements set out in this syllabus and the *QCE and QCIA policy and procedures handbook*, schools have autonomy to decide:

- how and when subject matter is delivered
- how, when and why learning experiences are developed, and the context in which learning occurs
- how opportunities are provided in the course of study for explicit and integrated teaching and learning of complementary skills.

These decisions allow teachers to develop a course of study that is rich, engaging and relevant for their students.

2.3.3 Assessment

Senior syllabuses set out only what is essential while being flexible so teachers can make assessment decisions to suit their students, school context, resources and expertise.

Applied senior syllabuses contain assessment specifications and conditions for the assessment instruments that must be implemented with Units 3 and 4. These specifications and conditions ensure comparability, equity and validity in assessment.

Within the requirements set out in this syllabus and the *QCE and QCIA policy and procedures handbook*, schools have autonomy to decide:

- specific assessment task details
- assessment contexts to suit available resources
- how the assessment task will be integrated with teaching and learning activities
- how authentic the task will be.

In Unit 1 and Unit 2, schools:

- develop at least two but no more than four assessments
- complete at least one assessment for each unit
- ensure that each unit objective is assessed at least once.

In Units 3 and 4, schools develop four assessments using the assessment specifications and conditions provided in the syllabus.

More information about assessment in senior syllabuses is available in 'The assessment system' section of the *QCE and QCIA policy and procedures handbook*.

2.3.4 Subject matter

Each unit contains a unit description, unit objectives and subject matter. Subject matter is the body of information, mental procedures and psychomotor procedures (see Marzano & Kendall 2007, 2008) that are necessary for students' learning and engagement with the subject. Subject matter itself is not the specification of learning experiences but provides the basis for the design of student learning experiences.

Subject matter has a direct relationship with the unit objectives and provides statements of learning that have been constructed in a similar way to objectives.

2.3.5 Aboriginal perspectives and Torres Strait Islander perspectives

The QCAA is committed to reconciliation. As part of its commitment, the QCAA affirms that:

- Aboriginal peoples and Torres Strait Islander peoples are the first Australians, and have the oldest living cultures in human history
- Aboriginal peoples and Torres Strait Islander peoples have strong cultural traditions and speak diverse languages and dialects, other than Standard Australian English
- teaching and learning in Queensland schools should provide opportunities for students to deepen their knowledge of Australia by engaging with the perspectives of Aboriginal peoples and Torres Strait Islander peoples
- positive outcomes for Aboriginal students and Torres Strait Islander students are supported by successfully embedding Aboriginal perspectives and Torres Strait Islander perspectives across planning, teaching and assessing student achievement.

Guidelines about Aboriginal perspectives and Torres Strait Islander perspectives and resources for teaching are available at www.qcaa.qld.edu.au/k-12-policies/aboriginal-torres-strait-islander-perspectives.

Where appropriate, Aboriginal perspectives and Torres Strait Islander perspectives have been embedded in the subject matter.

2.3.6 Complementary skills

Opportunities for the development of complementary skills have been embedded throughout subject matter. These skills, which overlap and interact with syllabus subject matter, are derived from current education, industry and community expectations and encompass the knowledge, skills, capabilities, behaviours and dispositions that will help students live and work successfully in the 21st century.

These complementary skills are:

- literacy — the knowledge, skills, behaviours and dispositions about language and texts essential for understanding and conveying English language content
- numeracy — the knowledge, skills, behaviours and dispositions that students need to use mathematics in a wide range of situations, to recognise and understand the role of mathematics in the world, and to develop the dispositions and capacities to use mathematical knowledge and skills purposefully
- 21st century skills — the attributes and skills students need to prepare them for higher education, work, and engagement in a complex and rapidly changing world. These skills include critical thinking, creative thinking, communication, collaboration and teamwork, personal and social skills, and digital literacy. The explanations of associated skills are available at www.qcaa.qld.edu.au/senior/senior-subjects/general-subjects/21st-century-skills .

It is expected that aspects of literacy, numeracy and 21st century skills will be developed by engaging in the learning outlined in this syllabus. Teachers may choose to create additional explicit and intentional opportunities for the development of these skills as they design the course of study.

2.3.7 Additional subject-specific information

Additional subject-specific information has been included to support and inform the development of a course of study.

Ethical practices

In Information & Communication Technology, students demonstrate ethical practices throughout the course of study through:

- an understanding of practices relevant to ICT contexts to consider Aboriginal perspectives and Torres Strait Islander perspectives, including, where appropriate
  - Acknowledgment of Country (elders past, present and emerging)
  - significant geographical locations for project work and/or client meetings and presentations
  - images and videos of deceased persons accompanied with a warning
- ethical use of resources, including, where appropriate
  - due diligence
  - software licensing and user registration requirements
  - intellectual property and copyright laws
- an awareness of practices and processes that will enable equal access to opportunities and resources for marginalised or minority groups.

2.4 Reporting

General information about determining and reporting results for senior syllabuses is provided in the 'Determining and reporting results' section of the *QCE and QCIA policy and procedures handbook*.

2.4.1 Reporting standards

Reporting standards are summary statements that describe typical performance at each of the five levels (A–E).

A
The student shows proficient demonstration of industry practices, skills and processes when developing products. They demonstrate insightful and justified interpretation of client briefs and technical information. The student strategically selects and sequences industry practices, skills and processes. They provide insightful and justified evaluations of practices, skills, processes and products. The student's adaptation of practices and processes is insightful and justified when developing products.
B
The student shows efficient demonstration of industry practices, skills and processes when developing products. They demonstrate detailed and supported interpretation of client briefs and technical information. The student considerately selects and sequences industry practices, skills and processes. They provide detailed and supported evaluations of practices, skills, processes and products. The student's adaptation of practices and processes is detailed and supported when developing products.
C
The student shows demonstration of industry practices, skills and processes when developing products. They interpret client briefs and technical information. The student selects and sequences industry practices, skills and processes. They evaluate practices, skills, processes and products. The student adapts ICT practices and processes when developing products.
D
The student shows inconsistent demonstration of industry practices, skills and processes when developing products. They demonstrate narrow and unsupported interpretation of client briefs and technical information. The student inconsistently selects and sequences industry practices, skills and processes. They provide narrow and unsupported evaluations of practices, skills, processes and products. The student's adaptation of practices and processes is narrow and unsupported when developing products.
E
The student shows incorrect demonstration of industry practices, skills and processes when developing products. They demonstrate superficial and unsubstantiated interpretation of client briefs and technical information. The student incorrectly selects and sequences industry practices, skills and processes. They provide superficial and unsubstantiated evaluations of practices, skills, processes and products. The student's adaptation of practices and processes is superficial and unsubstantiated when developing products.

2.4.2 Determining and reporting results

Unit 1 and Unit 2

Schools make A–E judgments on individual assessment instruments implemented in Unit 1 and Unit 2 using reporting standards.

Schools report results to the QCAA for students who complete Unit 1 and/or Unit 2. Results are reported as satisfactory (S) or unsatisfactory (U). Where appropriate, schools may also report a not rated (NR).

Units 3 and 4

Schools make A–E judgments on each of the four assessment instruments implemented in Units 3 and 4 using instrument-specific standards (ISS).

Schools report instrument results to the QCAA for students enrolled in Units 3 and 4 for each of the four assessments implemented. Where appropriate, schools may also report a not rated (NR).

Schools are also responsible for determining and reporting an A–E final subject result to the QCAA. The subject result is an on-balance judgment about how the pattern of evidence across the four assessments in Units 3 and 4 best matches the characteristics of the reporting standards at one of five levels (A–E).

3 Unit options

3.1 Unit option A: Robotics

In this unit, students explore robotics industry practices, standards and processes. They use knowledge of industry practices and processes to demonstrate fundamental skills for producing robot or drone products. They interpret client briefs, technical information, existing and emerging trends and products to inform development of products to industry standards. Students evaluate and adapt processes and products based on the outcomes of testing and feedback to improve alignment with client briefs and product specifications. They use language and mode-appropriate forms of communication authentic to robotics projects to document product development and communicate information.

3.1.1 Unit objectives

1. Demonstrate robotics industry practices, skills and processes.
2. Interpret client briefs and technical information.
3. Select robotics industry practices and processes.
4. Sequence robotics processes.
5. Evaluate robotics processes and products.
6. Adapt robotics processes and products.

3.1.2 Subject matter

Pathways

- Explore industry career pathways for robotics.

Client briefs and technical information

- Recognise the construct of
  - client briefs, including
    - contextual information about the client and their target audience or end users
    - the client goals or the problem they would like to solve
  - technical requirements, including industry conventions and standards.
- Interpret client briefs and technical information to
  - determine the purpose of a product
  - identify product specifications for robot or drone products, including hardware and software components and features that meet client expectations and the purpose of the product.
- Examine existing products and emerging concepts to identify factors that influence industry trends and client expectations based on products with a similar purpose in the same or other industries, e.g. education, agriculture, construction, mining, delivery, engineering, search and rescue, conservation, security and defence, logistics, transport, tourism, aerospace, artificial intelligence.

Skills

- Demonstrate use of hardware to produce robot or drone products, including
  - peripherals and parts, e.g. CPU (brain), controllers, propellers, wheels, claws, grippers, sensors (motion, optical, temperature), GPS, gyro
  - capabilities and limitations of components, e.g. power sources, charging and battery life, range, wireless program download, micro-SD card port for added storage, dashboards, touchscreens
  - compatibility and features of hardware components, e.g. drivers for peripherals and input/output components and devices, smart ports, 3-wire ports for sensors.
- Demonstrate use of software to produce robot or drone products, including
  - capabilities and limitations of free, trial and/or paid software, e.g. open-source drone software
  - low-level programming, e.g. software framework (SDK) for autonomous flight features, intelligent path planning, live telemetry
  - high-level programming, e.g. API libraries to integrate additional actuators, sensors and unlock more features
  - compatibility with platforms and other software.

- Demonstrate workflows, techniques and conventions to produce robotics components, including
  - techniques for assembling hardware components, e.g. ports, cables
  - techniques for developing programmed components, e.g. programming constructs, frameworks and libraries
  - conventions for testing and feedback, e.g. testing environment (physical or virtual), checklists, focus groups, user testing, surveys
  - programming languages and conventions, e.g. C/C++, Python, Java, C#, .NET.
- Demonstrate understanding of visual and aesthetic components or features of robotics, including
  - visual communication elements (line, shape, size and colour) and principles (contrast, alignment, repetition and proximity)
  - semiotics, through informed use of signs and symbols that influence human interactions with robotics
  - usability heuristics for user interfaces.
- Use language and mode-appropriate features to
  - document product development, including
    - checklists, notes, sketches, schemas, diagrams, images and annotations
    - iterations (testing, feedback and adaptations)
    - presentation of ideas, components or the final product
  - communicate with clients or work teams, maintaining personal integrity, including
    - information sharing, e.g. private vs. personal information relevant to a project, work team and/or client
    - communication using digital forums, e.g. email, text message, video conferencing, social media
  - communicate with clients or work teams in a digital and physical environment about milestones, iterations and deadlines.

Practices

- Recognise industry practices relevant to robotics regarding client expectations of product quality, including standards and guidelines for robotics, e.g. Asimov's laws.
- Demonstrate safe, secure and responsible file management practices, including
  - file naming conventions and file types (working and final versions)
  - importing and exporting
  - access, storage, security and organisation of information for all file types, considering
    - implications of file size and hardware/device storage capacity, e.g. HDD or SSD, CPU and RAM (processing)
    - legibility and accessibility of handover documentation, e.g. image resolution and format
    - security and storage of data in software packages, e.g. local or cloud, password protected files and systems
    - logical structuring and conventions for file names and directories, including version control practices and protocols
    - backup procedures and frequency.
- Demonstrate an awareness of safe work practices and processes relevant to robotics, including
  - compliance with workplace health and safety
  - techniques for avoiding harm, e.g. taking regular breaks, stretching, maintaining distance between drones, wearing safety goggles.
- Demonstrate ethical practices in robotics.

Processes

- Determine the sequence of robotics processes required to produce robot or drone products.
- Evaluate processes and products using knowledge of industry practices, client briefs and technical information, including
  - selection and sequence of robotics processes to assemble hardware components and develop programmed components
  - comparability of robot or drone products with industry conventions and standards
  - testing product effectiveness and suitability against client expectations and product specifications based on the purpose of the product and technical information.
- Adapt robotics processes and products, including
  - applying new or different processes, or reapplying processes to refine components
  - modifying components to remove or add features to improve alignment to the client brief and technical information or in relevant industry conventions and standards.

3.2 Unit option B: App development

In this unit, students explore app development industry practices, standards and processes. They use knowledge of industry practices and processes to demonstrate fundamental skills for producing native apps. They interpret client briefs, technical information, existing and emerging trends and products to inform the development of products to meet industry standards. Students evaluate and adapt processes and products based on the outcomes of testing and feedback to improve alignment with client briefs and product specifications. They use language and mode-appropriate forms of communication authentic to app development projects to document product development and communicate information.

3.2.1 Unit objectives

1. Demonstrate app development industry practices, skills and processes.
2. Interpret client briefs and technical information.
3. Select app development industry practices and processes.
4. Sequence app development processes.
5. Evaluate app development processes and products.
6. Adapt app development processes and products.

3.2.2 Subject matter

Pathways

- Explore industry career pathways for app development.

Client briefs and technical information

- Recognise the construct of
  - client briefs, including
    - contextual information about the client and their target audience or end users
    - the client goals or the problem they would like to solve
  - technical requirements, including industry conventions and standards.
- Interpret client briefs and technical information to
  - determine the purpose of a product
  - identify product specifications for native apps, including hardware and software components and features that meet client expectations and the purpose of the product.
- Examine existing products and emerging concepts to identify
  - industry trends and client expectations based on products with a similar purpose in the same or other industries, e.g. education, agriculture, construction, mining, delivery, engineering, search and rescue, conservation, security and defence, logistics, transport, tourism, aerospace
  - advances in hardware and software capabilities, e.g. camera features, biometrics, temperature sensors, proximity sensors, gyroscope, accelerometer, artificial intelligence
  - social media, marketing, key personalities, and access, e.g. device recycling and sustainability.

Skills

- Demonstrate use of hardware to produce native apps, including
  - peripherals, e.g. touch, voice and facial recognition, motion detection (tilt and shake), game controllers, VR HUDs
  - capabilities and limitations of devices and components e.g., CPU and GPU processing power
  - compatibility between hardware components e.g., drivers for peripherals and input/output components and devices.
- Demonstrate use of software to produce native apps, including
  - capabilities and limitations of free, trial and/or paid software
  - technical features, e.g. access to device components and features (phone calls, text messaging, GPS, orientation, acceleration, text-to-speech and speech recognition, microphone, camera and speakers)
  - compatibility with platforms and other software.

- Demonstrate workflows, techniques and conventions to produce native apps, including
  - project setup conventions in selected software environments, e.g. document setup, directory structure, file types, file naming conventions
  - techniques for developing app components, e.g. programming constructs, frameworks, libraries
  - conventions for testing and feedback, e.g. testing environment (physical or virtual), checklists, focus groups, user testing, surveys
  - programming languages and conventions, e.g. C#, JavaScript, Java, Kotlin, Swift.
- Demonstrate understanding of visual and aesthetic components or features of native apps, including
  - visual communication elements (line, shape, size and colour) and principles (contrast, alignment, repetition and proximity)
  - semiotics, through informed use of signs and symbols, e.g. icons, navigation symbols
  - usability heuristics for user interfaces.
- Use language and mode-appropriate features to
  - document product development, including
    - checklists, notes, sketches, schemas, diagrams, images and annotations
    - iterations (testing, feedback, and adaptations)
    - presentation of ideas, components or the final product
  - communicate with clients or work teams maintaining personal integrity including
    - information sharing, e.g. private vs. personal information relevant to a project, work team and/or client
    - communication using digital forums, e.g. email, text message, video conferencing, social media
  - communicate with clients or work teams in a digital and physical environment about milestones, iterations and deadlines.

Practices

- Recognise industry practices relevant to app development regarding client expectations of product quality, including standards and guidelines for app development, including
  - user interface (UI) and user experience (UX) design principles
  - Australian Cyber Security Centre guidelines for software development
  - entertainment rating guidelines
  - platform-specific guidelines
  - accessibility requirements for native apps, including Web Content Accessibility Guidelines (WCAG).

- Demonstrate safe, secure and responsible file management practices, including
  - file naming conventions and file types (working and final versions)
  - importing and exporting
  - access, storage, security and organisation of information for all file types, considering
    - implications of file size and hardware/device storage capacity, e.g. HDD or SSD, CPU and RAM (processing)
    - legibility and accessibility of handover documentation, e.g. image resolution and format
    - security and storage of data in software packages, e.g. local or cloud, password protected files and systems
    - logical structuring and conventions for file names and directories, including version control practices and protocols
    - backup procedures and frequency.
- Demonstrate an awareness of safe work practices and processes relevant to app development, including
  - compliance with workplace health and safety
  - techniques for avoiding harm, e.g. taking regular breaks, stretching, wearing safety goggles, volume control, screen time, workstation setup and configuration of desks, chairs, other hardware.
- Demonstrate ethical practices in app development.

Processes

- Determine the sequence of app development processes required to produce native apps.
- Evaluate processes and products using knowledge of industry practices, client briefs and technical information, including
  - selection and sequence of app development processes to incorporate hardware components and develop programmed components
  - comparability of native apps with industry conventions and standards
  - testing product effectiveness and suitability against client expectations and product specifications based on the purpose of the product and technical information.
- Adapt app development processes and products, including
  - applying new or different processes, or reapplying processes to refine components
  - modifying components to remove or add features to improve alignment to the client brief and technical information or in relevant industry conventions and standards.

3.3 Unit option C: Audio and video production

In this unit, students explore audio and video production industry practices, standards and processes. They use knowledge of industry practices and processes to demonstrate fundamental skills for producing audiovisual products. They interpret client briefs, technical information, existing and emerging trends and products to inform development of products to industry standards. Students evaluate and adapt processes and products based on the outcomes of testing and feedback to improve alignment with client briefs and product specifications. They use language and mode-appropriate forms of communication authentic to audio and video production projects to document product development and communicate information.

3.3.1 Unit objectives

1. Demonstrate audio and video production industry practices, skills and processes.
2. Interpret client briefs and technical information.
3. Select audio and video production industry practices and processes.
4. Sequence audio and video production processes.
5. Evaluate audio and video production processes and products.
6. Adapt audio and video production processes and products.

3.3.2 Subject matter

Pathways

- Explore industry career pathways for audio and video production.

Client briefs and technical information

- Recognise the construct of
  - client briefs, including
    - contextual information about the client and their target audience or end users
    - the client goals or the problem they would like to solve
  - technical requirements, including industry conventions and standards.
- Interpret client briefs and technical information to
  - determine the purpose of a product
  - identify product specifications for audiovisual products, including hardware and software components and features that meet client expectations and the purpose of the product.
- Examine existing products and emerging concepts to identify industry trends and client expectations based on
  - products with a similar purpose in the same or other industries, e.g. education, agriculture, construction, mining, delivery, engineering, search and rescue, conservation, security and defence, logistics, transport, tourism, aerospace
  - advances in hardware and software capabilities, e.g. image quality and processing features on mobile devices, artificial intelligence
  - social media, marketing, key personalities, access, reach and audience engagement in advertising, e.g. demographics, overlay advertisements (banners, logo bugs).

Skills

- Demonstrate use of hardware to produce audiovisual products, including
  - peripherals, e.g. video cameras, microphones, webcams, speakers, phones, other recording devices
  - capabilities and limitations of devices and components, e.g. pixel quality of cameras, wi-fi connectivity for streaming
  - compatibility between hardware components, e.g. drivers for peripherals and input/output components and devices.
- Demonstrate use of software to produce audiovisual products, including
  - capabilities and limitations of free, trial and/or paid software
  - technical features, e.g. compression, export file types, special effects, transitions, meta data (titles, descriptions, language)
  - compatibility with platforms and other software.

- Demonstrate workflows, techniques, and conventions to produce audiovisual components, including
  - preparing the workspace and hardware components
  - project setup conventions in selected software environments, e.g. document setup, directory structure, file types, file naming conventions
  - techniques for developing audio and video components, e.g. image capture, sound capture or creation, mixing and editing
  - conventions for testing and feedback, e.g. exporting conventions (format, compression), checklists, focus groups, user testing, surveys.
- Demonstrate understanding of produce visual or aesthetic components or features of audiovisual products, including
  - visual communication elements (line, shape, size and colour) and principles (contrast, alignment, repetition and proximity)
  - semiotics, through informed use of signs and symbols, e.g. mise en scène, hand signals during a shoot
  - semiotics, through informed use of sound and other auditory communication techniques that communicate to an audience, e.g. music, sound effects
  - line of view, golden triangle, zone of proximity, rule of thirds, visual balance and proportion.
- Use language and mode-appropriate features to
  - document product development, including
    - checklists, notes, sketches, schemas, diagrams, images and annotations
    - iterations (testing, feedback, and adaptations)
    - presentation of ideas, components or the final product
  - communicate with clients or work teams maintaining personal integrity including
    - information sharing, e.g. private vs. personal information relevant to a project, work team and/or client
    - communication using digital forums, e.g. email, text message, video conferencing, social media
  - communicate with clients or work teams in a digital and physical environment about milestones, iterations and deadlines.

Practices

- Recognise industry practices relevant to audio and video production regarding client expectations of product quality, including
  - program classifications
  - content and advertising rules, standards and codes
  - commercial television industry codes of practice
  - codes of ethics
  - platform guidelines and policies
  - accessibility requirements for audiovisual products, e.g. closed captions, audio description services (WCAG Level AA and AAA standards).

- Demonstrate safe, secure and responsible file management practices, including
  - file naming conventions and file types (working and final versions)
  - importing and exporting
  - access, storage, security and organisation of information for all file types, considering
    - implications of file size and hardware/device storage capacity, e.g. HDD or SSD, CPU and RAM (processing)
    - legibility and accessibility of handover documentation, e.g. image resolution and format
    - security and storage of data in software packages, e.g. local or cloud, password protected files and systems
    - logical structuring and conventions for file names and directories, including version control practices and protocols
    - backup procedures and frequency.
- Demonstrate an awareness of safe work practices and processes relevant to audio and video production, including
  - compliance with workplace health and safety
  - techniques for avoiding harm, e.g. taking regular breaks, stretching, wearing safety goggles, volume control, screen time, workstation setup and configuration of desks, chairs, other hardware.
- Demonstrate ethical practices in audio and video production.

Processes

- Determine the sequence of audio and video production processes required to produce audiovisual products.
- Evaluate processes and products using knowledge of industry practices, client briefs and technical information, including
  - selection and sequence of audio and video production processes to assemble hardware components and develop programmed components
  - comparability of audiovisual products with industry conventions and standards
  - testing product effectiveness and suitability against client expectations and product specifications based on the purpose of the product and technical information.
- Adapt audio and video production processes and products, including
  - applying new or different processes, or reapplying processes to refine components
  - modifying components to remove or add features to improve alignment to the client brief and technical information or in relevant industry conventions and standards.

3.4 Unit option D: Layout and publishing

In this unit, students explore layout and publishing industry practices, standards and processes. They use knowledge of industry practices and processes to demonstrate fundamental skills for producing layout and publishing products. They interpret client briefs, technical information, existing and emerging trends and products to inform development of products to industry standards. Students evaluate and adapt processes and products based on the outcomes of testing and feedback to improve alignment with client briefs and product specifications. They use language and mode-appropriate forms of communication authentic to layout and publishing projects to document product development and communicate information.

3.4.1 Unit objectives

1. Demonstrate layout and publishing industry practices, skills and processes
2. Interpret client briefs and technical information.
3. Select layout and publishing industry practices and processes.
4. Sequence layout and publishing processes.
5. Evaluate layout and publishing processes and products.
6. Adapt layout and publishing processes and products.

3.4.2 Subject matter

Pathways

- Explore industry career pathways for layout and publishing.

Client briefs and technical information

- Recognise the construct of
  - client briefs, including
    - contextual information about the client and their target audience or end users
    - the client goals or the problem they would like to solve
  - technical requirements, including industry conventions and standards.
- Interpret client briefs and technical information to
  - determine the purpose of a product
  - identify product specifications for layout and publishing products, including hardware and software components and features that meet client expectations and the purpose of the product.
- Examine existing products and emerging concepts to identify industry trends and client expectations based on
  - products with a similar purpose in the same or other industries, e.g. education, agriculture, construction, mining, delivery, engineering, search and rescue, conservation, security and defence, logistics, transport, tourism, aerospace
  - advances in hardware and software capabilities, e.g. changes in outdoor advertising methods, shift from print to digital mediums, integration of artificial intelligence
  - social media, marketing, key personalities and access
  - typography, e.g. new typefaces, font options
  - purpose of layout documents, e.g. brochures, fliers, posters, catalogues, directories, annual reports, invoices, forms, business cards, letterheads, newsletters, magazines, newspapers, books, packaging layouts for retail merchandise, store signs, highway signs, billboards.
  - screen resolution
  - print formats, e.g. page dimensions, packaging conventions configurations.

Skills

- Demonstrate use of hardware to produce layout and publishing products, including
  - peripherals, e.g. types of printers (offset vs. digital), device screen sizes
  - capabilities and limitations of devices and components, e.g. local storage capacity (HDD, SSD), RAM (graphics processing)
  - compatibility between hardware components, e.g. drivers for peripherals and input/output components and devices.

- Demonstrate use of software to produce layout and publishing products, including
  - capabilities and limitations of free, trial and/or paid software
  - technical features, e.g. templates, image libraries, font libraries, import and export options, responsive layouts, alpha channels, transparency support
  - compatibility with platforms and other software.
- Demonstrate workflows, techniques and conventions to produce layout and publishing products, including
  - project setup conventions in selected software environments, e.g. document setup, directory structure, file types, file naming conventions
  - techniques for developing layout components, e.g. importing, combining, arranging and applying effects to artefacts, text, other elements
  - conventions for testing and feedback, e.g. print proofs, markup, checklists, focus groups, user testing, surveys.
- Demonstrate understanding of visual and aesthetic components or features of layout and publishing products, including
  - visual communication elements (line, shape, size and colour) and principles (contrast, alignment, repetition and proximity)
  - semiotics, through informed use of signs and symbols, e.g. typefaces (serif and sans-serif), emoticons, emojis
  - line of view, golden triangle, zone of proximity, rule of thirds, visual balance and proportion.
- Use language and mode-appropriate features to
  - document product development, including
    - checklists, notes, sketches, schemas, diagrams, images and annotations
    - iterations (testing, feedback, and adaptations)
    - presentation of ideas, components or the final product
  - communicate with clients or work teams maintaining personal integrity including
    - information sharing, e.g. private vs. personal information relevant to a project, work team and/or client
    - communication using digital forums, e.g. email, text message, video conferencing, social media
  - communicate with clients or work teams in a digital and physical environment about milestones, iterations and deadlines.

Practices

- Recognise industry practices relevant to layout and publishing regarding client expectations of product quality, including
  - production of high-quality printed output for commercial printing and electronic distribution
  - use of predefined templates vs. custom layouts and style guides
  - colour systems, e.g. RGB, CMYK, PMS
  - converting print communication to responsive online formats
  - product packaging protocols for print and online

  - accessibility requirements for layout and publishing products, including
    - PDF accessibility, e.g. alt text for non-text elements, searchable text, fonts, labelled form fields, hyperlinks, navigational aids
    - Web Content Accessibility Guidelines (WCAG) for digital layouts.
- Demonstrate safe, secure and responsible file management practices, including
  - file naming conventions and file types (working and final versions)
  - importing and exporting
  - access, storage, security and organisation of information for all file types, considering
    - implications of file size and hardware/device storage capacity, e.g. HDD or SSD, CPU and RAM (processing)
    - legibility and accessibility of handover documentation, e.g. image resolution and format
    - security and storage of data in software packages, e.g. local or cloud, password protected files and systems
    - logical structuring and conventions for file names and directories, including version control practices and protocols
    - backup procedures and frequency.
- Demonstrate an awareness of safe work practices and processes relevant to layout and publishing, including
  - compliance with workplace health and safety
  - techniques for avoiding harm, e.g. taking regular breaks, stretching, wearing safety goggles, volume control, screen time, workstation setup and configuration of desks, chairs, other hardware.
- Demonstrate ethical practices in layout and publishing.

Processes

- Determine the sequence of layout and publishing processes required to produce layout and publishing products.
- Evaluate processes and products using knowledge of industry practices, client briefs and technical information, including
  - selection and sequence of layout and publishing processes, including hardware and software components
  - comparability of layout and publishing products with industry conventions and standards
  - testing product effectiveness and suitability against client expectations and product specifications based on the purpose of the product and technical information.
- Adapt layout and publishing processes and products, including
  - applying new or different processes, or reapplying processes to refine components
  - modifying components to remove or add features to improve alignment to the client brief and technical information or in relevant industry conventions and standards.

3.5 Unit option E: Digital imaging and modelling

In this unit, students explore digital imaging and modelling industry practices, standards and processes. They use knowledge of industry practices and processes to demonstrate fundamental skills for producing digital imaging and modelling products. They interpret client briefs, technical information, trends and products to inform development of products to industry standards. Students evaluate and adapt processes and products based on the outcomes of testing and feedback to improve alignment with client briefs and product specifications. They use language and mode-appropriate forms of communication authentic to digital imaging and modelling projects to document product development and communicate information.

3.5.1 Unit objectives

1. Demonstrate digital imaging and modelling industry practices, skills and processes.
2. Interpret client briefs and technical information.
3. Select digital imaging and modelling industry practices and processes.
4. Sequence digital imaging and modelling processes.
5. Evaluate digital imaging and modelling processes and products.
6. Adapt digital imaging and modelling processes and products.

3.5.2 Subject matter

Pathways

- Explore industry career pathways for digital imaging and modelling.

Client briefs and technical information

- Recognise the construct of
  - client briefs, including
    - contextual information about the client and their target audience or end users
    - the client goals or the problem they would like to solve
  - technical requirements, including industry conventions and standards.
- Interpret client briefs and technical information to
  - determine the purpose of a product
  - identify product specifications for digital imaging products, including hardware and software components and features that meet client expectations and the purpose of the product.
- Examine existing and emerging concepts and products to identify industry trends and client expectations based on
  - products with a similar purpose in the same or other industries, e.g. education, agriculture, construction, mining, delivery, engineering, search and rescue, conservation, security and defence, logistics, transport, tourism, aerospace
  - advances in hardware and software capabilities, e.g. special inks and AR integration, 3D modelling and holograms, computer generated imagery in games and movies, artificial intelligence image generation technologies
  - social media, marketing, key personalities, and access, e.g. eco-friendly inks, filaments and paper; recycling.

Skills

- Demonstrate use of hardware to produce digital imaging and modelling products, including
  - peripherals, e.g. drawing and graphics tablets, scanners and mobile scanning or image capture apps, cameras, 3D printers
  - capabilities and limitations of devices and components, e.g. local storage capacity (HDD, SSD), RAM (graphics processing and scratch disks)
  - compatibility between hardware components, e.g. drivers for drawing and graphics tablet input.
- Demonstrate use of software to produce digital imaging and modelling products with understanding of
  - capabilities and limitations of free, trial and/or paid software
  - technical features, e.g. 2D and 3D capabilities, texture mapping, lighting, extrusion, vector drawing and editing, converting raster to vector, flattening grouped layers, converting to smart objects, raster image manipulation (colour, filters, masks, selection), transparency, distortion, overlaying, type and text, file output types, generative fill
  - compatibility with operating systems and software.

- Demonstrate workflows, techniques and conventions to produce digital imaging and modelling components, including
  - project setup conventions in selected software environments, e.g. document setup, directory structure, file types, file naming conventions
  - techniques for developing digital imaging and modelling components, e.g. creation and manipulation of raster graphics, creation and formatting of vectors (shapes, drawing and tracing)
  - conventions for testing and feedback, e.g. checklists, focus groups, user testing, surveys.
- Demonstrate understanding of visual and aesthetic components or features of digital imaging and modelling products, including
  - visual communication elements (line, shape, size and colour) and principles (contrast, alignment, repetition and proximity)
  - semiotics, through informed use of signs and symbols, e.g. typefaces (serif and sans-serif), icons, combination of shapes and colours
  - line of view, golden triangle, zone of proximity, rule of thirds, visual balance and proportion.
- Use language and mode-appropriate features to
  - document product development, including
    - checklists, notes, sketches, schemas, diagrams, images and annotations
    - iterations (testing, feedback, and adaptations)
    - presentation of ideas, components or the final product
  - communicate with clients or work teams maintaining personal integrity including
    - information sharing, e.g. private vs. personal information relevant to a project, work team and/or client
    - communication using digital forums, e.g. email, text message, video conferencing, social media
  - communicate with clients or work teams in a digital and physical environment about milestones, iterations and deadlines.

Practices

- Recognise industry practices relevant to digital imaging and modelling regarding client expectations of product quality, including
  - Web Content Accessibility Guidelines (WCAG), e.g. appropriate contrast ratios between colours
  - colour systems, e.g. RGB, CMYK, PMS
  - style guides
  - product packaging protocols for print and digital output
  - output resolutions for low-fidelity and high-fidelity digital and printed products, e.g. pixel density (ppi, dpi), layer height (microns).

- Demonstrate safe, secure and responsible file management practices, including
  - file naming conventions and file types (working and final versions)
  - importing and exporting
  - access, storage, security and organisation of information for all file types, considering
    - implications of file size and hardware/device storage capacity, e.g. HDD or SSD, CPU and RAM (processing)
    - legibility and accessibility of handover documentation, e.g. image resolution and format
    - security and storage of data in software packages, e.g. local or cloud, password protected files and systems
    - logical structuring and conventions for file names and directories, including version control practices and protocols
    - backup procedures and frequency.
- Demonstrate an awareness of safe work practices and processes relevant to digital imaging and modelling, including
  - compliance with workplace health and safety
  - techniques for avoiding harm, e.g. taking regular breaks, stretching, wearing safety goggles, volume control, screen time, workstation setup and configuration of desks, chairs, other hardware.
- Demonstrate ethical practices in digital imaging and modelling.

Processes

- Determine the sequence of digital imaging and modelling processes required to produce digital imaging and modelling products.
- Evaluate processes and products using knowledge of industry practices, client briefs and technical information, including
  - selection and sequence of digital imaging and modelling processes to assemble hardware components and develop programmed components
  - comparability of digital imaging and modelling products with industry conventions and standards
  - testing product effectiveness and suitability against client expectations and product specifications based on the purpose of the product and technical information.
- Adapt digital imaging and modelling processes and products, including
  - applying new or different processes, or reapplying processes to refine components
  - modifying components to remove or add features to improve alignment to the client brief and technical information or in relevant industry conventions and standards.

3.6 Unit option F: Web development

In this unit, students explore web development industry practices, standards and processes. They use knowledge of industry practices and processes to demonstrate fundamental skills for producing web applications. They interpret client briefs, technical information, existing and emerging concepts and products to inform development of products to industry standards. Students evaluate and adapt processes and products based on the outcomes of testing and feedback to improve alignment with client briefs and product specifications. They use language and mode-appropriate forms of communication authentic to web development projects to document product development and communicate information.

3.6.1 Unit objectives

1. Demonstrate web development industry practices, skills and processes.
2. Interpret client briefs and technical information.
3. Select web development industry practices and processes.
4. Sequence web development processes.
5. Evaluate web development processes and products.
6. Adapt web development processes and products.

3.6.2 Subject matter

Pathways

- Explore industry career pathways for web development.

Client briefs and technical information

- Recognise the construct of
  - client briefs, including
    - contextual information about the client and their target audience or end users
    - the client goals or the problem they would like to solve
  - technical requirements, including industry conventions and standards.
- Interpret client briefs and technical information to
  - determine the purpose of a product
  - identify product specifications for web applications products, including hardware and software components and features that meet client expectations and the purpose of the product.
- Examine existing and emerging concepts and products to identify industry trends and client expectations based on
  - products with a similar purpose in the same or other industries, e.g. education, agriculture, construction, mining, delivery, engineering, search and rescue, conservation, security and defence, logistics, transport, tourism, aerospace
  - advances in hardware and software capabilities, e.g. smart home appliances with web search capability, gaming trends, mobile technology trends, native vs. web app performance and features, artificial intelligence
  - social media, marketing, key personalities, and access, e.g. device recycling and sustainability.

Skills

- Demonstrate use of hardware to produce web applications, including
  - peripherals, e.g. standalone and mobile device displays with different resolutions, pixel density and viewport sizes
  - capabilities and limitations of devices and components, e.g. local storage capacity (HDD, SSD), RAM (graphics processing)
  - compatibility between hardware components, e.g. drivers for peripherals and input/output components and devices.
- Demonstrate use of software to produce web applications, including
  - capabilities and limitations of free, trial and/or paid software
  - technical features, e.g. browser compatibility
  - compatibility with operating systems and software packages.

- Demonstrate workflows, techniques and conventions to produce web application components, including
  - project setup conventions in selected software environments, e.g. document setup, directory structure, file types, file naming conventions
  - techniques for developing web application components, e.g. scripting/programming constructs, frameworks and libraries
  - conventions for testing and feedback, e.g. functionality testing, interface testing (A/B), compatibility testing (browsers), performance testing (page load times) and security testing (for authentication and other security features)
  - scripting/programming languages and conventions.
- Demonstrate understanding of visual and aesthetic components or features of web applications, including
  - visual communication elements (line, shape, size and colour) and principles (contrast, alignment, repetition and proximity)
  - semiotics, through informed use of signs and symbols, e.g. navigation icons, styling of hyperlinks, appearance of buttons and input fields
  - usability heuristics for user interface design.
- Use language and mode-appropriate features to
  - document product development, including
    - checklists, notes, sketches, schemas, diagrams, images and annotations
    - iterations (testing, feedback, and adaptations)
    - presentation of ideas, components or the final product
  - communicate with clients or work teams maintaining personal integrity including
    - information sharing, e.g. private vs. personal information relevant to a project, work team and/or client
    - communication using digital forums, e.g. email, text message, video conferencing, social media
  - communicate with clients or work teams in a digital and physical environment about milestones, iterations and deadlines.

Practices

- Recognise industry practices relevant to web development regarding client expectations of product quality and standards and guidelines for web development, including
  - World Wide Web Consortium (W3C) standards
  - style guide and coding conventions
  - responsive user interface design
  - user experience (UX) design principles
  - libraries and frameworks
  - metadata, e.g. page title and description
  - hosting requirements and conventions, e.g. domain names and registration
  - testing and launch conventions and protocols
  - Web Content Accessibility Guidelines (WCAG)
  - Web Accessibility Initiative (WAI).

- Demonstrate safe, secure and responsible file management practices, including
  - file naming conventions and file types (working and final versions), e.g. index.html for landing page, lower case with no spaces
  - importing and exporting
  - access, storage, security and organisation of information for all file types, considering
    - implications of file size and hardware/device storage capacity, e.g. HDD or SSD, CPU and RAM (processing)
    - legibility and accessibility of handover documentation, e.g. image resolution and format
    - security and storage of data in software packages, e.g. local or cloud, password protected files and systems
    - logical structuring and conventions for file names and directories, including version control practices and protocols, e.g. file types grouped into folders (images, stylesheets)
    - backup procedures and frequency.
- Demonstrate an awareness of safe work practices and processes relevant to web development, including
  - compliance with workplace health and safety
  - techniques for avoiding harm, e.g. taking regular breaks, stretching, wearing safety goggles, volume control, screen time, workstation setup and configuration of desks, chairs, and other hardware.
- Demonstrate ethical practices in web development.

Processes

- Determine the sequence of web development processes required to produce web application products.
- Evaluate processes and products using knowledge of industry practices, client briefs and technical information, including
  - selection and sequence of web development processes to assemble hardware components and develop programmed components
  - comparability of web applications with industry conventions and standards
  - testing product effectiveness and suitability against client expectations and product specifications based on the purpose of the product and technical information.
- Adapt web development processes and products, including
  - applying new or different processes, or reapplying processes to refine components
  - modifying components to remove or add features to improve alignment to the client brief and technical information or in relevant industry conventions and standards.

4 Assessment

4.1 Assessment A1: Product proposal

Students produce a low-fidelity robot or drone prototype for a product proposal in response to a client brief and technical information.

4.1.1 Assessment objectives

1. Demonstrate robotics industry practices, skills and processes.
2. Interpret client briefs and technical information.
3. Select robotics industry practices, skills and processes.
5. Evaluate robotics processes and products.

4.1.2 Specifications

This task requires students to:

- interpret a client brief and associated technical information for a robot or drone product prototype
- identify the skills required to develop a low-fidelity robot or drone product prototype
- select industry practices, skills and processes to produce a low-fidelity robot or drone product prototype
- demonstrate skills and processes to produce a low-fidelity robot or drone product prototype
- reflect on the industry practices, skills and processes used to produce a low-fidelity robot or drone product prototype.

It is recommended that this task is designed so that students can develop a response in approximately 10 hours of class time.

Stimulus specifications

The teacher provides students with a client brief and technical information.

- The client brief must include the
  - contextual information about the client and their target audience or end users
  - the client goals or the problem they would like to solve.
- The technical information must include the
  - required industry standards
  - relevant handover expectations, e.g. documentation, files, components and/or deployment information.

4.1.3 Conditions

- Students can develop their responses in class time and their own time.
- Students have access to hardware and software as required to complete the assessment.
- This is an individual task.

4.1.4 Response requirements

Multimodal (at least two modes delivered at the same time): up to 3 minutes, 6 A4 pages, or equivalent digital media

4.1.5 Instrument-specific standards

Demonstrate	Interpret	Select	Evaluate	Grade
The student response has the following characteristics:				
• proficient demonstration of robotics industry practices, skills and processes when developing a low-fidelity robot or drone product prototype	• insightful and justified interpretation of client briefs and technical information when developing a low-fidelity robot or drone product prototype	• strategic selection of robotics industry practices, skills and processes when developing a low-fidelity robot or drone product prototype	• insightful and justified evaluation of processes and products when developing a low-fidelity robot or drone product prototype	A
• efficient demonstration of robotics industry practices, skills and processes when developing a low-fidelity robot or drone product prototype	• detailed and supported interpretation of client briefs and technical information when developing a low-fidelity robot or drone product prototype	• considered selection of robotics industry practices, skills and processes when developing a low-fidelity robot or drone product prototype	• detailed and supported evaluation of processes and products when developing a low-fidelity robot or drone product prototype	B
• demonstration of robotics industry practices, skills and processes when developing a low-fidelity robot or drone product prototype	• interpretation of client briefs and technical information when developing a low-fidelity robot or drone product prototype	• selection of robotics industry practices, skills and processes when developing a low-fidelity robot or drone product prototype	• evaluation of processes and products when developing a low-fidelity robot or drone product prototype	C
• inconsistent demonstration of robotics industry practices, skills and processes when developing a low-fidelity robot or drone product prototype.	• narrow and unsupported interpretation of client briefs and technical information when developing a low-fidelity robot or drone product prototype.	• inconsistent selection of robotics industry practices, skills and processes when developing a low-fidelity robot or drone product prototype.	• narrow and unsupported evaluation of processes and products when developing a low-fidelity robot or drone product prototype.	D
The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	E

4.2 Assessment A2: Project

Students produce a high-fidelity robot or drone product prototype in response to a client brief and technical information.

4.2.1 Assessment objectives

1. Demonstrate robotics industry practices, skills and processes.
2. Interpret client briefs and technical information.
3. Select robotics industry practices, skills and processes.
4. Sequence robotics development processes.
5. Evaluate robotics processes and products.
6. Adapt robotics processes and products.

4.2.2 Specifications

This task requires students to:

- produce a high-fidelity robot or drone product prototype by
  - demonstrating robotics skills and processes
  - implementing industry practices and robotics processes to perform the required skills
  - adapting robotics processes in response to testing and feedback to meet the requirements in the client brief and technical information
- document the development of a high-fidelity robot or drone product prototype by
  - interpreting the client brief and technical information to develop ideas with sketches, notes and calculations as necessary
  - deciding on the industry practices and robotics processes required to produce a high-fidelity robot or drone product prototype
  - determining the sequence in which robotics processes will be implemented
  - annotating images and sketches to capture decision-making
  - reflecting on the quality of the completed high-fidelity robot or drone product prototype, industry practices and processes used.

It is recommended that this task is designed so that students can develop a response in approximately 20 hours of class time.

Stimulus specifications

The teacher provides students with a client brief and technical information.

- The client brief must include the
  - contextual information about the client and their target audience or end users
  - the client goals or the problem they would like to solve
  - comments about an existing low-fidelity prototype, if applicable.
- The technical information must include the
  - required industry standards
  - relevant handover expectations, e.g. documentation, files, components and/or deployment information.

4.2.3 Conditions

- Students can develop their responses in class time and their own time.
- Students have access to hardware and software as required to complete the assessment.
- The product development process may be completed individually or in groups. Responses must be assessed individually.

4.2.4 Response requirements

Multimodal (at least two modes delivered at the same time): up to 5 minutes, 8 A4 pages, or equivalent digital media that includes a demonstration of the functionality of the high-fidelity robot or drone product prototype

4.2.5 Instrument-specific standards

Demonstrate	Interpret	Select	Sequence	Evaluate	Adapt	Grade
The student response has the following characteristics:						
• proficient demonstration of robotics industry practices, robotics skills and processes when developing a high-fidelity robot or drone product prototype	• insightful and justified interpretation of client briefs and technical information when developing a high-fidelity robot or drone product prototype	• strategic selection of robotics industry practices, skills and processes when developing a high-fidelity robot or drone product prototype	• strategic sequencing of robotics industry practices, skills and processes when developing a high-fidelity robot or drone product prototype	• insightful and justified evaluation of processes and products when developing a high-fidelity robot or drone product prototype	• insightful and justified adaptation of processes and products when developing a high-fidelity robot or drone product prototype	A
• efficient demonstration of robotics industry practices, robotics skills and processes when developing a high-fidelity robot or drone product prototype	• detailed and supported interpretation of client briefs and technical information when developing a high-fidelity robot or drone product prototype	• considered selection of robotics industry practices, skills and processes when developing a high-fidelity robot or drone product prototype	• considered sequencing of robotics industry practices, skills and processes when developing a high-fidelity robot or drone product prototype	• detailed and supported evaluation of processes and products when developing a high-fidelity robot or drone product prototype	• detailed and supported adaptation of processes and products when developing a high-fidelity robot or drone product prototype	B
• demonstration of robotics industry practices, robotics skills and processes when developing a high-fidelity robot or drone product prototype	• interpretation of client briefs and technical information when developing a high-fidelity robot or drone product prototype	• selection of robotics industry practices, skills and processes when developing a high-fidelity robot or drone product prototype	• sequencing of robotics industry practices, skills and processes when developing a high-fidelity robot or drone product prototype	• evaluation of processes and products when developing a high-fidelity robot or drone product prototype	• adaptation of processes and products when developing a high-fidelity robot or drone product prototype	C

Demonstrate	Interpret	Select	Sequence	Evaluate	Adapt	Grade
• inconsistent demonstration of robotics industry practices, robotics skills and processes when developing a high-fidelity robot or drone product prototype.	• narrow and unsupported interpretation of client briefs and technical information when developing a high-fidelity robot or drone product prototype.	• inconsistent selection of robotics industry practices, skills and processes when developing a high-fidelity robot or drone product prototype.	• inconsistent sequencing of robotics industry practices, skills and processes when developing a high-fidelity robot or drone product prototype.	• narrow and unsupported evaluation of processes and products when developing a high-fidelity robot or drone product prototype.	• narrow and unsupported adaptation of processes and products when developing a high-fidelity robot or drone product prototype.	D
The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	E

4.3 Assessment B1: Product proposal

Students produce a low-fidelity native app prototype for a product proposal in response to a client brief and technical information.

4.3.1 Assessment objectives

1. Demonstrate app development industry practices, skills and processes.
2. Interpret client briefs and technical information.
3. Select app development industry practices, skills and processes.
5. Evaluate app development processes and products.

4.3.2 Specifications

This task requires students to:

- interpret a client brief and associated technical information for a native app prototype
- identify the skills required to develop a low-fidelity native app prototype
- select industry practices, skills and processes to produce a low-fidelity native app prototype
- demonstrate skills and processes to produce a low-fidelity native app prototype
- reflect on the industry practices, skills and processes used to produce a low-fidelity native app prototype.

It is recommended that this task is designed so that students can develop a response in approximately 10 hours of class time.

Stimulus specifications

The teacher provides students with a client brief and technical information.

- The client brief must include the
  - contextual information about the client and their target audience or end users
  - the client goals or the problem they would like to solve.
- The technical information must include the
  - required industry standards
  - relevant handover expectations, e.g. documentation, files, components and/or deployment information.

4.3.3 Conditions

- Students can develop their responses in class time and their own time.
- Students have access to hardware and software as required to complete the assessment.
- This is an individual task.

4.3.4 Response requirements

Multimodal (at least two modes delivered at the same time): up to 3 minutes, 6 A4 pages, or equivalent digital media

4.3.5 Instrument-specific standards

Demonstrate	Interpret	Select	Evaluate	Grade
The student response has the following characteristics:				
• proficient demonstration of app development industry practices, skills and processes when developing a low-fidelity native app prototype	• insightful and justified interpretation of client briefs and technical information when developing a low-fidelity native app prototype	• strategic selection of app development industry practices, skills and processes when developing a low-fidelity native app prototype	• insightful and justified evaluation of processes and products when developing a low-fidelity native app prototype	A
• efficient demonstration of app development industry practices, skills and processes when developing a low-fidelity native app prototype	• detailed and supported interpretation of client briefs and technical information when developing a low-fidelity native app prototype	• considered selection of app development industry practices, skills and processes when developing a low-fidelity native app prototype	• detailed and supported evaluation of processes and products when developing a low-fidelity native app prototype	B
• demonstration of app development industry practices, skills and processes when developing a low-fidelity native app prototype	• interpretation of client briefs and technical information when developing a low-fidelity native app prototype	• selection of app development industry practices, skills and processes when developing a low-fidelity native app prototype	• evaluation of processes and products when developing a low-fidelity native app prototype	C
• inconsistent demonstration of app development industry practices, skills and processes when developing a low-fidelity native app prototype.	• narrow and unsupported interpretation of client briefs and technical information when developing a low-fidelity native app prototype.	• inconsistent selection of app development industry practices, skills and processes when developing a low-fidelity native app prototype.	• narrow and unsupported evaluation of processes and products when developing a low-fidelity native app prototype.	D
The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	E

4.4 Assessment B2: Project

Students produce a high-fidelity native app prototype in response to a client brief and technical information.

4.4.1 Assessment objectives

1. Demonstrate app development industry practices, skills and processes.
2. Interpret client briefs and technical information.
3. Select app development industry practices, skills and processes.
4. Sequence app development processes.
5. Evaluate app development processes and products.
6. Adapt app development processes and products.

4.4.2 Specifications

This task requires students to:

- produce a high-fidelity native app prototype by
  - demonstrating app development skills and processes
  - implementing industry practices and app development processes to perform the required skills
  - adapting app development processes in response to testing and feedback to meet the requirements in the client brief and technical information
- document the development of a high-fidelity native app prototype by
  - interpreting the client brief and technical information to develop ideas with sketches, notes and calculations as necessary
  - deciding on the industry practices and app development processes required to produce a high-fidelity native app prototype
  - determining the sequence in which app development processes will be implemented
  - annotating images and sketches to capture decision-making
  - reflecting on the quality of the completed high-fidelity native app prototype, industry practices and development processes used.

It is recommended that this task is designed so that students can develop a response in approximately 20 hours of class time.

Stimulus specifications

The teacher provides students with a client brief and technical information.

- The client brief must include the
  - contextual information about the client and their target audience or end users
  - the client goals or the problem they would like to solve
  - comments about an existing low-fidelity prototype, if applicable.
- The technical information must include the
  - required industry standards
  - relevant handover expectations, e.g. documentation, files, components and/or deployment information.

4.4.3 Conditions

- Students can develop their responses in class time and their own time.
- Students have access to hardware and software as required to complete the assessment.
- The product development process may be completed individually or in groups. Responses must be assessed individually.

4.4.4 Response requirements

Multimodal (at least two modes delivered at the same time): up to 5 minutes, 8 A4 pages, or equivalent digital media that includes a demonstration of the functionality of the high-fidelity native app prototype

4.4.5 Instrument-specific standards

Demonstrate	Interpret	Select	Sequence	Evaluate	Adapt	Grade
The student response has the following characteristics:						
• proficient demonstration of app development industry practices, skills and processes when developing a high-fidelity native app prototype	• insightful and justified interpretation of client briefs and technical information when developing a high-fidelity native app prototype	• strategic selection of app development industry practices, skills and processes when developing a high-fidelity native app prototype	• strategic sequencing of app development industry practices, skills and processes when developing a high-fidelity native app prototype	• insightful and justified evaluation of processes and products when developing a high-fidelity native app prototype	• insightful and justified adaptation of processes and products when developing a high-fidelity native app prototype	A
• efficient demonstration of app development industry practices, skills and processes when developing a high-fidelity native app prototype	• detailed and supported interpretation of client briefs and technical information when developing a high-fidelity native app prototype	• considered selection of app development industry practices, skills and processes when developing a high-fidelity native app prototype	• considered sequencing of app development industry practices, skills and processes when developing a high-fidelity native app prototype	• detailed and supported evaluation of processes and products when developing a high-fidelity native app prototype	• detailed and supported adaptation processes and products when developing a high-fidelity native app prototype	B
• demonstration of app development industry practices, skills and processes when developing a high-fidelity native app prototype	• interpretation of client briefs and technical information when developing a high-fidelity native app prototype	• selection of app development industry practices, skills and processes when developing a high-fidelity native app prototype	• sequencing of app development industry practices, skills and processes when developing a high-fidelity native app prototype	• evaluation of processes and products when developing a high-fidelity native app prototype	• adaptation of processes and products when developing a high-fidelity native app prototype	C
• inconsistent demonstration of app development industry practices, skills and processes when developing a high-fidelity native app prototype.	• narrow and unsupported interpretation of client briefs and technical information when developing a high-fidelity native app prototype.	• inconsistent selection of app development industry practices, skills and processes when developing a high-fidelity native app prototype.	• inconsistent sequencing of app development industry practices, skills and processes when developing a high-fidelity native app prototype.	• narrow and unsupported evaluation of processes and products when developing a high-fidelity native app prototype.	• narrow and unsupported adaptation of processes and products when developing a high-fidelity native app prototype.	D

Demonstrate	Interpret	Select	Sequence	Evaluate	Adapt	Grade
The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	E

4.5 Assessment C1: Product proposal

Students produce a low-fidelity audiovisual product prototype for a product proposal in response to a client brief and technical information.

4.5.1 Assessment objectives

1. Demonstrate audio and video production industry practices, skills and development processes.
2. Interpret client briefs and technical information.
3. Select audio and video production industry practices, skills and development processes.
5. Evaluate audio and video production processes and products.

4.5.2 Specifications

This task requires students to:

- interpret a client brief and associated technical information for an audiovisual product prototype
- identify the skills required to develop a low-fidelity audiovisual product prototype
- select industry practices, skills and processes to produce a low-fidelity audiovisual product prototype
- demonstrate skills and processes to produce a low-fidelity audiovisual product prototype
- reflect on the industry practices, skills and processes used to produce a low-fidelity audiovisual product prototype.

It is recommended that this task is designed so that students can develop a response in approximately 10 hours of class time.

Stimulus specifications

The teacher provides students with a client brief and technical information.

- The client brief must include the
  - contextual information about the client and their target audience or end users
  - the client goals or the problem they would like to solve.
- The technical information must include the
  - required industry standards
  - relevant handover expectations, e.g. documentation, files, components and/or deployment information.

4.5.3 Conditions

- Students can develop their responses in class time and their own time.
- Students have access to hardware and software as required to complete the assessment.
- This is an individual task.

4.5.4 Response requirements

Multimodal (at least two modes delivered at the same time): up to 5 minutes, 8 A4 pages, or equivalent digital media

4.5.5 Instrument-specific standards

Demonstrate	Interpret	Select	Evaluate	Grade
The student response has the following characteristics:				
• proficient demonstration of audio and video production industry practices, skills and processes when developing a low-fidelity audiovisual product prototype	• insightful and justified interpretation of client briefs and technical information when developing a low-fidelity audiovisual product prototype	• strategic selection of audio and video production industry practices, skills and processes when developing a low-fidelity audiovisual product prototype	• insightful and justified evaluation of audio and video production processes and products when developing a low-fidelity audiovisual product prototype	A
• efficient demonstration of audio and video production industry practices, skills and processes when developing a low-fidelity audiovisual product prototype	• detailed and supported interpretation of client briefs and technical information when developing a low-fidelity audiovisual product prototype	• considered selection of audio and video production industry practices, skills and processes when developing a low-fidelity audiovisual product prototype	• detailed and supported evaluation of audio and video production processes and products when developing a low-fidelity audiovisual product prototype	B
• demonstration of audio and video production industry practices, skills and processes when developing a low-fidelity audiovisual product prototype	• interpretation of client briefs and technical information when developing a low-fidelity audiovisual product prototype	• selection of audio and video production industry practices, skills and processes when developing a low-fidelity audiovisual product prototype	• evaluation of audio and video production processes and products when developing a low-fidelity audiovisual product prototype	C
• inconsistent demonstration of audio and video production industry practices, skills and processes when developing a low-fidelity audiovisual product prototype.	• narrow and unsupported interpretation of client briefs and technical information when developing a low-fidelity audiovisual product prototype.	• inconsistent selection of audio and video production industry practices, skills and processes when developing a low-fidelity audiovisual product prototype.	• narrow and unsupported evaluation of audio and video production processes and products when developing a low-fidelity audiovisual product prototype.	D
The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	E

4.6 Assessment C2: Project

Students produce a high-fidelity audiovisual product prototype in response to a client brief and technical information.

4.6.1 Assessment objectives

1. Demonstrate audio and video production industry practices, skills and development processes.
2. Interpret client briefs and technical information.
3. Select audio and video production industry practices, skills and development processes.
4. Sequence audio and video production processes.
5. Evaluate audio and video production processes and products.
6. Adapt audio and video production processes and products.

4.6.2 Specifications

This task requires students to:

- produce a high-fidelity audiovisual product prototype by
  - demonstrating audio and video production skills and processes
  - implementing industry practices and audio and video production processes to perform the required skills
  - adapting audio and video production processes in response to testing and feedback to meet the requirements in the client brief and technical information
- document the development of a high-fidelity audiovisual product prototype by
  - interpreting the client brief and technical information to develop ideas with sketches, notes and calculations as necessary
  - deciding on the industry practices and audio and video production processes required to produce a high-fidelity audiovisual product prototype
  - determining the sequence in which audio and video production processes will be implemented
  - annotating images and sketches to capture decision-making
  - reflecting on the quality of the completed high-fidelity audiovisual product prototype, industry practices and processes used.

It is recommended that this task is designed so that students can develop a response in approximately 20 hours of class time.

Stimulus specifications

The teacher provides students with a client brief and technical information.

- The client brief must include the
  - contextual information about the client and their target audience or end users
  - the client goals or the problem they would like to solve
  - comments about an existing low-fidelity prototype, if applicable.
- The technical information must include the
  - required industry standards
  - relevant handover expectations, e.g. documentation, files, components and/or deployment information.

4.6.3 Conditions

- Students can develop their responses in class time and their own time.
- Students have access to hardware and software as required to complete the assessment.
- The product development process may be completed individually or in groups. Responses must be assessed individually.

4.6.4 Response requirements

Multimodal (at least two modes delivered at the same time): up to 5 minutes, 8 A4 pages, or equivalent digital media that includes a demonstration of the functionality of the high-fidelity audiovisual product prototype

4.6.5 Instrument-specific standards

Demonstrate	Interpret	Select	Sequence	Evaluate	Adapt	Grade
The student response has the following characteristics:						
• proficient demonstration of audio and video production industry practices, skills and processes when developing a high-fidelity audiovisual product prototype	• insightful and justified interpretation of client briefs and technical information when developing a high-fidelity audiovisual product prototype	• strategic selection of audio and video production industry practices, skills and processes when developing a high-fidelity audiovisual product prototype	• strategic sequencing of audio and video production industry practices, skills and processes when developing a high-fidelity audiovisual product prototype	• insightful and justified evaluation of audio and video production processes and products when developing a high-fidelity audiovisual product prototype	• insightful and justified adaptation of audio and video production processes and products when developing a high-fidelity audiovisual product prototype	A
• efficient demonstration of audio and video production industry practices, skills and processes when developing a high-fidelity audiovisual product prototype	• detailed and supported interpretation of client briefs and technical information when developing a high-fidelity audiovisual product prototype	• considered selection of audio and video production industry practices, skills and processes when developing a high-fidelity audiovisual product prototype	• considered sequencing of audio and video production industry practices, skills and processes when developing a high-fidelity audiovisual product prototype	• detailed and supported evaluation of audio and video production processes and products when developing a high-fidelity audiovisual product prototype	• detailed and supported adaptation of audio and video production processes and products when developing a high-fidelity audiovisual product prototype	B
• demonstration of audio and video production industry practices, skills and processes when developing a high-fidelity audiovisual product prototype	• interpretation of client briefs and technical information when developing a high-fidelity audiovisual product prototype	• selection of audio and video production industry practices, skills and processes when developing a high-fidelity audiovisual product prototype	• sequencing of audio and video production industry practices, skills and processes when developing a high-fidelity audiovisual product prototype	• evaluation of audio and video production processes and products when developing a high-fidelity audiovisual product prototype	• adaptation of audio and video production processes and products when developing a high-fidelity audiovisual product prototype	C

Demonstrate	Interpret	Select	Sequence	Evaluate	Adapt	Grade
• inconsistent demonstration of audio and video production industry practices, skills and processes when developing a high-fidelity audiovisual product prototype.	• narrow and unsupported interpretation of client briefs and technical information when developing a high-fidelity audiovisual product prototype.	• inconsistent selection of audio and video production industry practices, skills and processes when developing a high-fidelity audiovisual product prototype.	• inconsistent sequencing of audio and video production industry practices, skills and processes when developing a high-fidelity audiovisual product prototype.	• narrow and unsupported evaluation of audio and video production processes and products when developing a high-fidelity audiovisual product prototype.	• narrow and unsupported adaptation of audio and video production processes and products when developing a high-fidelity audiovisual product prototype.	D
The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	E

4.7 Assessment D1: Product proposal

Students produce a low-fidelity layout and publishing prototype for a product proposal in response to a client brief and technical information.

4.7.1 Assessment objectives

1. Demonstrate layout and publishing industry practices, skills and processes.
2. Interpret client briefs and technical information.
3. Select layout and publishing industry practices, skills and processes.
5. Evaluate layout and publishing processes and products.

4.7.2 Specifications

This task requires students to:

- interpret a client brief and associated technical information for a layout and publishing prototype
- identify the skills required to develop a low-fidelity layout and publishing prototype
- select industry practices, skills and processes to produce a low-fidelity layout and publishing prototype
- demonstrate skills and processes to produce a low-fidelity layout and publishing prototype
- reflect on the industry practices, skills and processes used to produce a low-fidelity layout and publishing prototype.

It is recommended that this task is designed so that students can develop a response in approximately 10 hours of class time.

Stimulus specifications

The teacher provides students with a client brief and technical information.

- The client brief must include the
  - contextual information about the client and their target audience or end users
  - the client goals or the problem they would like to solve.
- The technical information must include the
  - required industry standards
  - relevant handover expectations, e.g. documentation, files, components and/or deployment information.

4.7.3 Conditions

- Students can develop their responses in class time and their own time.
- Students have access to hardware and software as required to complete the assessment.
- This is an individual task.

4.7.4 Response requirements

Multimodal (at least two modes delivered at the same time): up to 3 minutes, 6 A4 pages, or equivalent digital media

4.7.5 Instrument-specific standards

Demonstrate	Interpret	Select	Evaluate	Grade
The student response has the following characteristics:				
• proficient demonstration of layout and publishing industry practices, skills and processes when developing a low-fidelity layout and publishing prototype	• insightful and justified interpretation of client briefs and technical information when developing a low-fidelity layout and publishing prototype	• strategic selection of layout and publishing industry practices, skills and processes when developing a low-fidelity layout and publishing prototype	• insightful and justified evaluation of layout and publishing processes and products when developing a low-fidelity layout and publishing prototype	A
• efficient demonstration of layout and publishing industry practices, skills and processes when developing a low-fidelity layout and publishing prototype	• detailed and supported interpretation of client briefs and technical information when developing a low-fidelity layout and publishing prototype	• considered selection of layout and publishing industry practices, skills and processes when developing a low-fidelity layout and publishing prototype	• detailed and supported evaluation layout and publishing processes and products when developing a low-fidelity layout and publishing prototype	B
• demonstration of layout and publishing industry practices, skills and processes when developing a low-fidelity layout and publishing prototype	• interpretation of client briefs and technical information when developing a low-fidelity layout and publishing prototype	• selection of layout and publishing industry practices, skills and processes when developing a low-fidelity layout and publishing prototype	• evaluation of layout and publishing processes and products when developing a low-fidelity layout and publishing prototype	C
• inconsistent demonstration of layout and publishing industry practices, skills and processes when developing a low-fidelity layout and publishing prototype.	• narrow and unsupported interpretation of client briefs and technical information when developing a low-fidelity layout and publishing prototype.	• inconsistent selection of layout and publishing industry practices, skills and processes when developing a low-fidelity layout and publishing prototype.	• narrow and unsupported evaluation of layout and publishing processes and products when developing a low-fidelity layout and publishing prototype.	D
The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	E

4.8 Assessment D2: Project

Students produce a high-fidelity layout and publishing prototype in response to a client brief and technical information.

4.8.1 Assessment objectives

1. Demonstrate layout and publishing industry practices, skills and processes.
2. Interpret client briefs and technical information.
3. Select layout and publishing industry practices, skills and processes.
4. Sequence layout and publishing processes.
5. Evaluate layout and publishing processes and products.
6. Adapt layout and publishing processes and products.

4.8.2 Specifications

This task requires students to:

- produce a high-fidelity layout and publishing prototype by
  - demonstrating layout and publishing skills and processes
  - implementing industry practices and layout and publishing processes to perform the required skills
  - adapting layout and publishing in response to testing and feedback to meet the requirements in the client brief and technical information
- document the development of a high-fidelity layout and publishing prototype by
  - interpreting the client brief and technical information to develop ideas with sketches, notes and calculations as necessary
  - deciding on the industry practices and layout and publishing processes required to produce a high-fidelity layout and publishing prototype
  - determining the sequence in which layout and publishing processes will be implemented
  - annotating images and sketches to capture decision-making
  - reflecting on the quality of the completed high-fidelity layout and publishing prototype, industry practices and processes used.

It is recommended that this task is designed so that students can develop a response in approximately 20 hours of class time.

Stimulus specifications

The teacher provides students with a client brief and technical information.

- The client brief must include the
  - contextual information about the client and their target audience or end users
  - the client goals or the problem they would like to solve
  - comments about an existing low-fidelity prototype, if applicable.
- The technical information must include the
  - required industry standards
  - relevant handover expectations, e.g. documentation, files, components and/or deployment information.

4.8.3 Conditions

- Students can develop their responses in class time and their own time.
- Students have access to hardware and software as required to complete the assessment.
- The product development process may be completed individually or in groups. Responses must be assessed individually.

4.8.4 Response requirements

Multimodal (at least two modes delivered at the same time): up to 5 minutes, 8 A4 pages, or equivalent digital media that includes a demonstration of the functionality of the high-fidelity layout and publishing prototype

4.8.5 Instrument-specific standards

Demonstrate	Interpret	Select	Sequence	Evaluate	Adapt	Grade
The student response has the following characteristics:						
• proficient demonstration of layout and publishing industry practices, skills and processes when developing a high-fidelity layout and publishing prototype	• insightful and justified interpretation of client briefs and technical information when developing a high-fidelity layout and publishing prototype	• strategic selection of layout and publishing industry practices, skills and processes when developing a high-fidelity layout and publishing prototype	• strategic sequencing of layout and publishing industry practices, skills and processes when developing a high-fidelity layout and publishing prototype	• insightful and justified evaluation of layout and publishing industry practices, skills and processes when developing a high-fidelity layout and publishing prototype	• insightful and justified adaptation of layout and publishing industry practices and processes when developing a high-fidelity layout and publishing prototype	A
• efficient demonstration of layout and publishing industry practices, skills and processes when developing a high-fidelity layout and publishing prototype	• detailed and supported interpretation of client briefs and technical information when developing a high-fidelity audiovisual product prototype	• considered selection of layout and publishing industry practices, skills and processes when developing a high-fidelity layout and publishing prototype	• considered sequencing of layout and publishing industry practices, skills and processes when developing a high-fidelity layout and publishing prototype	• detailed and supported evaluation of layout and publishing industry practices, skills and processes when developing a high-fidelity layout and publishing prototype	• detailed and supported adaptation of layout and publishing industry practices and processes when developing a high-fidelity layout and publishing prototype	B
• demonstration of layout and publishing industry practices, skills and processes when developing a high-fidelity layout and publishing prototype	• interpretation of client briefs and technical information when developing a high-fidelity audiovisual product prototype	• selection of layout and publishing industry practices, skills and processes when developing a high-fidelity layout and publishing prototype	• sequencing of layout and publishing industry practices, skills and processes when developing a high-fidelity layout and publishing prototype	• evaluation of layout and publishing industry practices, skills and processes when developing a high-fidelity layout and publishing prototype	• adaptation of layout and publishing industry practices and processes when developing a high-fidelity layout and publishing prototype	C

Demonstrate	Interpret	Select	Sequence	Evaluate	Adapt	Grade
• inconsistent demonstration of layout and publishing industry practices, skills and processes when developing a high-fidelity layout and publishing prototype.	• narrow and unsupported interpretation of client briefs and technical information when developing a high-fidelity audiovisual product prototype.	• inconsistent selection of layout and publishing industry practices, skills and processes when developing a high-fidelity layout and publishing prototype.	• inconsistent sequencing of layout and publishing industry practices, skills and processes when developing a high-fidelity layout and publishing prototype.	• narrow and unsupported evaluation of layout and publishing industry practices, skills and processes when developing a high-fidelity layout and publishing prototype.	• narrow and unsupported adaptation of layout and publishing industry practices and processes when developing a high-fidelity layout and publishing prototype.	D
The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	E

4.9 Assessment E1: Product proposal

Students produce a low-fidelity digital imaging and modelling prototype for a product proposal in response to a client brief and technical information.

4.9.1 Assessment objectives

1. Demonstrate digital imaging and modelling industry practices, skills and processes.
2. Interpret client briefs and technical information.
3. Select digital imaging and modelling industry practices, skills and processes.
5. Evaluate digital imaging and modelling skills, processes and products.

4.9.2 Specifications

This task requires students to:

- interpret a client brief and associated technical information for a digital imaging and modelling prototype
- identify the skills required to develop a low-fidelity digital imaging and modelling prototype
- select industry practices, skills and processes to produce a low-fidelity digital imaging and modelling prototype
- demonstrate skills and processes to produce a low-fidelity digital imaging and modelling prototype
- reflect on the industry practices, skills and processes used to produce a low-fidelity digital imaging and modelling prototype.

It is recommended that this task is designed so that students can develop a response in approximately 10 hours of class time.

Stimulus specifications

The teacher provides students with a client brief and technical information.

- The client brief must include the
  - contextual information about the client and their target audience or end users
  - the client goals or the problem they would like to solve.
- The technical information must include the
  - required industry standards
  - relevant handover expectations, e.g. documentation, files, components and/or deployment information.

4.9.3 Conditions

- Students can develop their responses in class time and their own time.
- Students have access to hardware and software as required to complete the assessment.
- This is an individual task.

4.9.4 Response requirements

Multimodal (at least two modes delivered at the same time): up to 3 minutes, 6 A4 pages, or equivalent digital media

4.9.5 Instrument-specific standards

Demonstrate	Interpret	Select	Evaluate	Grade
The student response has the following characteristics:				
• proficient demonstration of digital imaging and modelling industry practices, skills and processes when developing a low-fidelity digital imaging and modelling prototype	• insightful and justified interpretation of client briefs and technical information when developing a low-fidelity digital imaging and modelling prototype	• strategic selection of digital imaging and modelling industry practices, skills and processes when developing a low-fidelity digital imaging and modelling prototype	• insightful and justified evaluation of digital imaging and modelling industry practices, skills and processes when developing a low-fidelity digital imaging and modelling prototype	A
• efficient demonstration of digital imaging and modelling industry practices, skills and processes when developing a low-fidelity digital imaging and modelling prototype	• detailed and supported interpretation of client briefs and technical information when developing a low-fidelity digital imaging and modelling prototype	• considered selection of digital imaging and modelling industry practices, skills and processes when developing a low-fidelity digital imaging and modelling prototype	• detailed and supported evaluation of digital imaging and modelling industry practices, skills and processes when developing a low-fidelity digital imaging and modelling prototype	B
• demonstration of digital imaging and modelling industry practices, skills and processes when developing a low-fidelity digital imaging and modelling prototype	• interpretation of client briefs and technical information when developing a low-fidelity digital imaging and modelling prototype	• selection of digital imaging and modelling industry practices, skills and processes when developing a low-fidelity digital imaging and modelling prototype	• evaluation of digital imaging and modelling industry practices, skills and processes when developing a low-fidelity digital imaging and modelling prototype	C
• inconsistent demonstration of digital imaging and modelling industry practices, skills and processes when developing a low-fidelity digital imaging and modelling prototype.	• narrow and unsupported interpretation of client briefs and technical information when developing a low-fidelity digital imaging and modelling prototype.	• inconsistent selection of digital imaging and modelling industry practices, skills and processes when developing a low-fidelity digital imaging and modelling prototype.	• narrow and unsupported evaluation of digital imaging and modelling industry practices, skills and processes when developing a low-fidelity digital imaging and modelling prototype.	D
The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	E

4.10 Assessment E2: Project

Students produce a high-fidelity digital imaging and modelling prototype in response to a client brief and technical information.

4.10.1 Assessment objectives

1. Demonstrate digital imaging and modelling industry practices, skills and processes.
2. Interpret client briefs and technical information.
3. Select digital imaging and modelling industry practices, skills and processes.
4. Sequence digital imaging and modelling processes.
5. Evaluate digital imaging and modelling processes and products.
6. Adapt digital imaging and modelling processes and products.

4.10.2 Specifications

This task requires students to:

- produce a high-fidelity digital imaging and modelling prototype by
  - demonstrating digital imaging and modelling skills and processes
  - implementing industry practices and digital imaging and modelling processes to perform the required skills
  - adapting digital imaging and modelling processes in response to testing and feedback to meet the requirements in the client brief and technical information
- document the development of a high-fidelity digital imaging and modelling prototype by
  - interpreting the client brief and technical information to develop ideas with sketches, notes and calculations as necessary
  - deciding on the industry practices and digital imaging and modelling processes required to produce a high-fidelity layout and publishing prototype
  - determining the sequence in which digital imaging and modelling processes will be implemented
  - annotating images and sketches to capture decision-making
  - reflecting on the quality of the completed high-fidelity digital imaging and modelling prototype, industry practices and processes used.

It is recommended that this task is designed so that students can develop a response in approximately 20 hours of class time.

Stimulus specifications

The teacher provides students with a client brief and technical information.

- The client brief must include the
  - contextual information about the client and their target audience or end users
  - the client goals or the problem they would like to solve
  - comments about an existing low-fidelity prototype, if applicable.
- The technical information must include the
  - required industry standards
  - relevant handover expectations, e.g. documentation, files, components and/or deployment information.

4.10.3 Conditions

- Students can develop their responses in class time and their own time.
- Students have access to hardware and software as required to complete the assessment.
- The product development process may be completed individually or in groups. Responses must be assessed individually.

4.10.4 Response requirements

Multimodal (at least two modes delivered at the same time): up to 5 minutes, 8 A4 pages, or equivalent digital media that includes a demonstration of the functionality of the high-fidelity digital imaging and modelling prototype

4.10.5 Instrument-specific standards

Demonstrate	Interpret	Select	Sequence	Evaluate	Adapt	Grade
The student response has the following characteristics:						
• proficient demonstration of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity digital imaging and modelling prototype	• insightful and justified interpretation of client briefs and technical information when developing a high-fidelity digital imaging and modelling prototype	• strategic selection of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity digital imaging and modelling prototype	• strategic sequencing of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity digital imaging and modelling prototype	• insightful and justified evaluation of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity digital imaging and modelling prototype	• insightful and justified adaptation of digital imaging and modelling industry practices and processes when developing a high-fidelity digital imaging and modelling prototype	A
• efficient demonstration of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity digital imaging and modelling prototype	• detailed and supported interpretation of client briefs and technical information when developing a high-fidelity digital imaging and modelling prototype	• considered selection of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity digital imaging and modelling prototype	• considered sequencing of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity digital imaging and modelling prototype	• detailed and supported evaluation of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity digital imaging and modelling prototype	• detailed and supported adaptation of digital imaging and modelling industry practices and processes when developing a high-fidelity digital imaging and modelling prototype	B
• demonstration of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity digital imaging and modelling prototype	• interpretation of client briefs and technical information when developing a high-fidelity digital imaging and modelling prototype	• selection of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity digital imaging and modelling prototype	• sequencing of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity digital imaging and modelling prototype	• evaluation of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity digital imaging and modelling prototype	• adaptation of digital imaging and modelling industry practices and processes when developing a high-fidelity digital imaging and modelling prototype	C

Demonstrate	Interpret	Select	Sequence	Evaluate	Adapt	Grade
• inconsistent demonstration of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity digital imaging and modelling prototype.	• narrow and unsupported interpretation of client briefs and technical information when developing a high-fidelity digital imaging and modelling prototype.	• inconsistent selection of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity digital imaging and modelling prototype.	• inconsistent sequencing of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity digital imaging and modelling prototype.	• narrow and unsupported evaluation of layout and publishing industry practices, skills and processes when developing a high-fidelity layout and publishing prototype.	• narrow and unsupported adaptation of digital imaging and modelling industry practices and processes when developing a high-fidelity digital imaging and modelling prototype.	D
The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	E

4.11 Assessment F1: Product proposal

Students produce a low-fidelity web application prototype for a product proposal in response to a client brief and technical information.

4.11.1 Assessment objectives

1. Demonstrate web development industry practices, skills and processes.
2. Interpret client briefs and technical information.
3. Select web development industry practices, skills and processes.
5. Evaluate web development skills, processes and products.

4.11.2 Specifications

This task requires students to:

- interpret a client brief and associated technical information for a web application
- identify the skills required to develop a low-fidelity web application
- select industry practices, skills and processes to produce a low-fidelity web application
- demonstrate skills and development processes to produce a low-fidelity web application
- reflect on the industry practices, skills and development processes used to produce a low-fidelity web application.

It is recommended that this task is designed so that students can develop a response in approximately 10 hours of class time.

Stimulus specifications

The teacher provides students with a client brief and technical information.

- The client brief must include the
  - contextual information about the client and their target audience or end users
  - the client goals or the problem they would like to solve.
- The technical information must include the
  - required industry standards
  - relevant handover expectations, e.g. documentation, files, components and/or deployment information.

4.11.3 Conditions

- Students can develop their responses in class time and their own time.
- Students have access to hardware and software as required to complete the assessment.
- This is an individual task.

4.11.4 Response requirements

Multimodal (at least two modes delivered at the same time): up to 3 minutes, 6 A4 pages, or equivalent digital media

4.11.5 Instrument-specific standards

Demonstrate	Interpret	Select	Evaluate	Grade
The student response has the following characteristics:				
• proficient demonstration of web development industry practices, skills and processes when developing a low-fidelity web application prototype	• insightful and justified interpretation of client briefs and technical information when developing a low-fidelity web application prototype	• strategic selection of web development industry practices, skills and processes when developing a low-fidelity web application prototype	• insightful and justified evaluation of web development industry practices, skills and processes when developing a low-fidelity web application prototype	A
• efficient demonstration of web development industry practices, skills and processes when developing a low-fidelity web application prototype	• detailed and supported interpretation of client briefs and technical information when developing a low-fidelity web application prototype	• considered selection of web development industry practices, skills and processes when developing a low-fidelity web application prototype	• detailed and supported evaluation of web development industry practices, skills and processes when developing a low-fidelity web application prototype	B
• demonstration of web development industry practices, skills and processes when developing a low-fidelity web application prototype	• interpretation of client briefs and technical information when developing a low-fidelity web application prototype	• selection of web development industry practices, skills and processes when developing a low-fidelity web application prototype	• evaluation of web development industry practices, skills and processes when developing a low-fidelity web application prototype	C
• inconsistent demonstration of web development industry practices, skills and processes when developing a low-fidelity web application prototype.	• narrow and unsupported interpretation of client briefs and technical information when developing a low-fidelity web application prototype.	• inconsistent selection of web development industry practices, skills and processes when developing a low-fidelity web application prototype.	• narrow and unsupported evaluation of web development industry practices, skills and processes when developing a low-fidelity web application prototype.	D
The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	E

4.12 Assessment F2: Project

Students produce a high-fidelity web application prototype in response to a client brief and technical information.

4.12.1 Assessment objectives

1. Demonstrate web development industry practices, skills and processes.
2. Interpret client briefs and technical information.
3. Select web development industry practices, skills and processes.
4. Sequence web development processes.
5. Evaluate web development processes and products.
6. Adapt web development processes and products.

4.12.2 Specifications

This task requires students to:

- produce a high-fidelity web application by
  - demonstrating web development skills and processes
  - implementing industry practices and web development processes to perform the required skills
  - adapting digital web development processes in response to testing and feedback to meet the requirements in the client brief and technical information
- document the development of a high-fidelity web application by
  - interpreting the client brief and technical information to develop ideas with sketches, notes and calculations as necessary
  - deciding on the industry practices and web development processes required to produce a high-fidelity web application
  - determining the sequence in which web development processes will be implemented
  - annotating images and sketches to capture decision-making
  - reflecting on the quality of the completed high-fidelity web application, industry practices and processes used.

It is recommended that this task is designed so that students can develop a response in approximately 20 hours of class time.

Stimulus specifications

The teacher provides students with a client brief and technical information.

- The client brief must include the
  - contextual information about the client and their target audience or end users
  - the client goals or the problem they would like to solve
  - comments about an existing low-fidelity prototype, if applicable.
- The technical information must include the
  - required industry standards
  - relevant handover expectations, e.g. documentation, files, components and/or deployment information.

4.12.3 Conditions

- Students can develop their responses in class time and their own time.
- Students have access to hardware and software as required to complete the assessment.
- The product development process may be completed individually or in groups. Responses must be assessed individually.

4.12.4 Response requirements

Multimodal (at least two modes delivered at the same time): up to 5 minutes, 8 A4 pages, or equivalent digital media that includes a demonstration of the functionality of the high-fidelity web application

4.12.5 Instrument-specific standards

Demonstrate	Interpret	Select	Sequence	Evaluate	Adapt	Grade
The student response has the following characteristics:						
• proficient demonstration of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity web application prototype	• insightful and justified interpretation of client briefs and technical information when developing a high-fidelity web application prototype	• strategic selection of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity web application prototype	• strategic sequencing of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity web application prototype	• insightful and justified evaluation of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity web application prototype	• insightful and justified adaptation of digital imaging and modelling industry practices and processes when developing a high-fidelity web application prototype	A
• efficient demonstration of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity digital web application prototype	• detailed and supported interpretation of client briefs and technical information when developing a high-fidelity web application prototype	• considered selection of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity web application prototype	• considered sequencing of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity web application prototype	• detailed and supported evaluation of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity web application prototype	• detailed and supported adaptation of digital imaging and modelling industry practices and processes when developing a high-fidelity web application prototype	B
• demonstration of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity web application prototype	• interpretation of client briefs and technical information when developing a high-fidelity web application prototype	• selection of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity web application prototype	• sequencing of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity web application prototype	• evaluation of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity web application prototype	• adaptation of digital imaging and modelling industry practices and processes when developing a high-fidelity web application prototype	C

Demonstrate	Interpret	Select	Sequence	Evaluate	Adapt	Grade
• inconsistent demonstration of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity web application prototype.	• narrow and unsupported interpretation of client briefs and technical information when developing a high-fidelity web application prototype.	• inconsistent selection of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity web application prototype.	• inconsistent sequencing of digital imaging and modelling industry practices, skills and processes when developing a high-fidelity web application prototype.	• narrow and unsupported evaluation of layout and publishing industry practices, skills and processes when developing a high-fidelity web application prototype.	• narrow and unsupported adaptation of digital imaging and modelling industry practices and processes when developing a high-fidelity web application prototype.	D
The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	The student response does not match any of the descriptors above.	E

5 Glossary

The syllabus glossary is available at www.qcaa.qld.edu.au/downloads/senior-qce/common/snr_glossary_cognitive_verbs.pdf.

6 References

Marzano, RJ & Kendall, JS 2007, *The New Taxonomy of Educational Objectives*, 2nd edition, Corwin Press, USA.

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7 Version history

Version	Date of change	Update
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