# Pre-approved Learning and Assessment Plan

Stage 2 Digital Communication Solutions (CAD) (from 2022)

Pre-approved learning and assessment plans are for *school use only*.

* Teachers may make changes to the plan, retaining alignment with the subject outline.
* The principal or delegate endorses the use of the plan, and any changes made to it, including use of an addendum.
* The plan does not need to be submitted to the SACE Board for approval.

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| School |  | Teacher(s) |  |

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| SACE school code |  | Year |  | Enrolment code |  | Program variant code (A–W) |
| Stage | Subject code | No. of credits (10 or 20) |
|  |  |  |  | **2** | **D** | **C** | **S** | **20** |  |

Addendum – changes made to the pre-approved learning and assessment plan

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| Describe any changes made to the pre-approved learning and assessment plan to support students to be successful in meeting the requirements of the subject. In your description, please explain:what changes have been made to the plan* the rationale for making the changes
* whether these changes have been made for all students, or for individuals within the student group.
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Endorsement

The use of the learning and assessment plan is approved for use in the school. Any changes made to the plan support student achievement of the performance standards and retain alignment with the subject outline.

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| Signature of principal or delegate |  | Date |  |

# Assessment overview

Stage 2 Digital Communication Solutions – 20 credits

Complete the table below to show details of the planned tasks. Use numbers to show where students will have the opportunity to provide evidence for each of the specific features for all assessment design criteria.

Assessment Type 1: **Specialised Skills Task** – weighting 20%

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| --- | --- | --- |
| Assessment details | Assessment design criteria | Assessment conditions (e.g. task type, word length, time allocated, supervision) |
| I | D | P | E |
| Specialised Skills Task 1: modelling and renderingStudents will be given an item and a measuring device. They will produce individual parts, a final assembly and renderings of the item for assessment. Assessment is based on * the completeness and accuracy of the CAD model/s
* the quality of the finished renders
* a written/multimodal reflection of the processes used, problems encountered and solutions to these problem.

The outcome of this skills task is usable for Specialised Skills Application 2 |  |  | 1,2 | 1 | Specialised Skills Task 1: modelling and rendering should be a maximum of 600 words if written, 4 minutes if an oral, or the equivalent in multimodal form. |
| Specialised Skills Task 2: technical drawingsStudents are required to produce a range of technical drawings (to AS1100 standard) of their CAD model which was produced in Specialised Skills Application 1. These technical drawings are to be produced using Inventor CAD software, and are to include an exploded General Assembly Drawing with Parts List, plus individual dimensioned part drawings for selected components. Students are assessed on* layout
* dimensioning and detailing reference to the appropriate AS1100 drawing standards
* a written/multimodal reflection of the processes used, problems encountered and solutions to these problems
 |  |  | 1,2 | 1 | Specialised Skills Task 2: technical drawings should be a maximum of 600 words if written, 4 minutes if an oral, or the equivalent in multimodal form. |

Assessment Type 2: **Design Process and** Product – weighting 50%

| Assessment details | Assessment design criteria | Assessment conditions (e.g. task type, word length, time allocated, supervision) |
| --- | --- | --- |
| I | D | P | E |
| FolioStudents create a design folio, documenting their design from conception to realisation. The folio must include* Investigation and Analysis
* A design brief that outlines functional outcomes, aesthetic considerations, constraints and a statement of intent, and identification of criteria to evaluate the success of the solution
* Investigation and critical analysis of existing products, materials and processes
* Design Development and Planning
* Sketches and technical drawings communicating design intent
* A timeline outlining the sequence of the realisation process
* Evaluation
* A critical comparison of the realised product with the criteria specified in the design brief, and an explanation and justification for any changes made
* Reflection on outcomes with recommendations for possible improvement or redevelopment of designs or procedures
* Evaluative observations about the student’s own skill development
 | 1 | 1 |  | 1 | The evidence should be a maximum of 2500 words if written, or 15 minutes recorded oral documentation, or the equivalent in multimodal form. |
| SolutionStudents produce the solution as designed in their folio. They produce a video or photographic record that includes evidence of:* Development of skills
* Selection and use of appropriate processes and techniques
* Modification to the design as a result of technical problems that arise
* Ongoing reflection on ideas and procedures

The realised solution must be showcased in the video/photographic record. |  | 2 | 1,2 |  | The evidence for the solution realisation task should be a maximum of 500 words if written or 3 minutes of recorded oral communication, or the equivalent in multimodal form. |

Assessment Type 3: Resource Study – weighting 30%

| Assessment details | Assessment design criteria | Assessment conditions (e.g. task type, word length, time allocated, supervision) |
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| I | D | P | E |
| **Part One: Resource Investigation**Students investigate and analyse the functional characteristics and properties of two or more materials or components they are considering for use in the creation of their solution. They report on how their research into and testing of the functional characteristics and properties of these materials or components will affect their selection for use in the realisation of their solution.e.g. Properties and testing of Stainless steel and AluminiumStudents investigate the properties of the stainless steel and aluminium and design three tests relevant to their solution to determine which material is most appropriate, for example a corrosion test. They analyse qualitative and quantitative data to make a recommendation in light of secondary (research) data collected prior to testing. | 1 | 2 |  |  | The combined evidence should be a maximum of 2000 words if written, or a maximum of 12 minutes recorded oral documentation, analysis, and evaluation, or the equivalent in multimodal form. |
| **Part Two: Issue Exploration**Students investigate and analyse ethical, legal, economic and/or sustainability issues specific to their solution.Students may investigate and analyse one or more of the following strategies or approaches;* Sustainability: life cycle analysis, carbon footprint, potential to reuse or recycle
* Ethical: use and application of the end product, concerns related to health and safety, discrimination, conflicts of interest, cultural influences
* Legal responsibilities: patents, safety requirements, intellectual property, creative commons, WHS legislation
* Economic considerations: costing, responsible use of resources, time management
 | 2 |  |  | 1 |

*Please refer to the Stage 2 Design, Technology, and Engineering subject outline.*