# Pre-approved Learning and Assessment Plan

Stage 2 Material Products (context: Composite - wood and metal)

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** | **M** | **M** | **A/B** | **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. |

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 Material Products – 20 credits

The table below provides details of the planned tasks and shows where students have the opportunity to provide evidence for each of the specific features of all of the assessment design criteria.

Assessment Type 1: Skills and Applications Tasks – weighting 20%

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| --- | --- | --- | --- | --- | --- |
| Assessment details | Assessment design criteria | | | | Assessment conditions  (e.g. task type, word length, time allocated, supervision) |
| I | Pl | Pr | E |
| Specialised Skills Application1  CAD drawing using a variety of software.  Students develop CAD drawings using a variety of software. The drawings must be capable of being sent to CAM software.  Students also research engineering drawing practices and decide on methods and conventions for naming and saving new or modified drawings. | 3 | 2 | 1 | 1 | Supervised: 3 weeks.  Students have a list of skills to practice, and they demonstrate them as they feel they reach proficiency.  Folio of drawings and an evaluation negotiate in its format. |
| Specialised Skills Application 2  Joining materials in different ways.   * Use smaller pieces of their chosen material, demonstrate proficiency at 3 joining techniques. (e.g. Sheet metal; spot welder/ pop-rivet/ MIG/ braze; Timber- laminating/ biscuit/ dovetail/ dowel/ housing) * The construction requires the students to demonstrate safe application of skills and techniques, resources, equipment and materials to create a product. * Explain why particular joining methods will be suitable for their intended project. | 4 | 3 | 2 | 3 | Supervised: 3 weeks.  Visual demonstration of, written explanation of process for creating and evaluation of joints.  Folio of step by step process and an evaluation. A maximum of 500 words or 3 minutes of oral, or the equivalent in multimodal form. |
| Material application  Investigate and analyse the functional characteristic and properties of 2 or more possible materials.   * Develop and conduct appropriate testing of an aspect of at least 2 possible construction materials. * Tests may be used to evaluate a characteristic appropriate to the main purposes of the planned major product (e.g. aesthetics, strength, waterproofing, and impact on the environment). * Results from the tests will be considered when making final production decisions. | 1,4,5 | 3 |  | 3 | Supervised: 3 weeks.  Students will develop their tests in consultation with the teacher.  Written account of testing methods, results and evaluation.  Maximum of 800 words or 5 minutes of oral, or the equivalent in multimodal form. |

Assessment Type 2: Product – weighting 50%

| Assessment details | Assessment design criteria | | | | Assessment conditions  (e.g. task type, word length, time allocated, supervision) |
| --- | --- | --- | --- | --- | --- |
| I | Pl | Pr | E |
| Minor product  Design and manufacture a component of their major product in consultation with teacher. Students construct a product record and demonstrate meeting the specifications of a prepared design brief. The product record is used to provide evidence of modification and planning, production, and/or evaluation aspects of the design process that occur during the creation of the product |  | 1 | 2,3 | 3 | Self-Directed: 4 weeks  The Product record may consist of a journal or report with photographic evidence or a multimedia presentation |
| Major product (Product)  Design and manufacture an original product which reflects a specific need that they have identified.  Students present for assessment the product(s) they have made in response to the design brief developed for their folio in Assessment Type 3. The product is supported by a product record that documents the process, including modifications, planning, and production.  The product record(s) may include, as appropriate, evidence related to:   * development of any skills that were not included in AT1 * selection and use of appropriate components, specialised processes, or production techniques * application of knowledge and understanding to create the product * the specifications of a prepared design brief * safe and accurate use of appropriate equipment and processes * modification of the design brief as a result of technical problems that arise * use of materials with appropriate functional characteristics and properties * ongoing reflection on ideas and procedures. |  | 1,2 | 1,2,3 | 1,2,4 | Self-Directed; 8 weeks.  Product Record may be in the form of:   * a journal or work notes * annotated images of production processes * computer-generated information with scanned images * annotated visual displays * multimedia presentations * web pages * oral presentations * a flow chart * reports. |

Assessment Type 3: Folio – weighting 30%

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| Assessment details | Assessment design criteria | | | | Assessment conditions  (e.g. task type, word length, time allocated, supervision) | |
| I | Pl | Pr | E |
| External assessment (two assessment for the folio)  *Product design (documentation and analysis)*  *Students create a design brief and analyse their investigation and planning for their major product, based on the skills and activities outlined in the section ‘The Design Process’ section of the Learning Scope and Requirements .* The design brief should include a statement of intent, functional outcomes, aesthetic considerations, and constraints. It can be presented in dot point form.  The investigating part of the design process should include an investigation into the impact on individuals, society, and/or the environment of technological practices related to the type of product that the student is designing. The analysis involved in investigation can be included in the product design documentation or in the product evaluation.  *Product evaluation:*  *Students evaluate their producing skills, using evidence from the major product record in Assessment Type 2, and evaluate their realised major product.* The evaluation should include:   * a critical comparison of the realised product with the requirements of the design brief, and an explanation of and justification for any changes made * a review of criteria, standards, reliability, safety, quality, and cost-effectiveness * reflection on outcomes, with recommendations for possible improvement or redevelopment of designs or procedures * analysis of the impact of the product on individuals, society, and/or the environment (if not part of product design documentation) * evaluative observations about the student’s own skills development.   Evidence of development, with supporting written or oral summaries that explain, analyse, and evaluate the process and product, could take the form of:   * all or sections of the product record * photographic or electronic or digitally generated materials * audiovisual evidence * materials * products * models * sketches, diagrams, or annotations.   Oral summaries may emerge from teacher-led discussion questions*.* | 1,2,3,  4,5 | 1,2,3 |  | 1,2,3,4 | 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. |

*Seven or eight assessments.**Please refer to the Stage 2 Design and Technology subject outline.*