PRE-APPROVED LEARNING AND ASSESSMENT PLAN

**Stage 1 Systems and Control Products**

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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| SACESchool Code |  | Year |  | Enrolment Code |  | Program Variant Code (A–W) |
| Stage | Subject Code | No. of Credits (10 or 20) |
|  |  |  |  | **1** | **S** | **S** | **P** | **10** |  |

**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 |  |

Stage 1 Systems and Control Products (10-credits)

Assessment Overview

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 and Weighting** | **Details of assessment** | **Assessment Design Criteria** | **Assessment conditions**(e.g. task type, word length, time allocated, supervision) |
| --- | --- | --- | --- |
| **I** | **Pl** | **Pr** | **E** |
| **Assessment Type 1: Skills and Applications Tasks****Weighting 30%** | **Solar Garden Light**Devise and develop an operational electronic circuit that meets the needs of a solar garden light. Students need to demonstrate the operation of the circuit in a proficient and sophisticated manner. |  |  | 1,2,3 | 2 | Practical is to be undertaken under teacher supervision in the workshop. Students must demonstrate skills in a highly proficient manner according to industry standards.Create a product safely and accurately. |
| **Solar and Wind Power Report – Materials Application**Using STELR equipment, students use a range of techniques and principles to measure the voltage, current and power to determine efficiency from solar panels and wind generators. Students are to then use a multi-meter to record and analyse the data from an installed solar panel over a four week period. Students compare their lab results with an in situ operating solar panel and draw conclusions re: the influence the characteristics of associated materials and components have on system efficiency. | 3 |  | 1,2 | 3 | Your task is to present an in-depth investigation and analysis report, demonstrating associated products, materials, processes and systems.Report is to be 400 words max (excluding graphs and pictures). |
| **Assessment Type 2: Folio****Weighting 20%** | **Net Zero Design*****Investigation***Students investigate existing alternative energy generation systems with respect to the following:* principles of energy efficient house design
* the production methods and materials to be used – reference should be made to the materials applications task
* impact on environment (individual or society)
* create a design brief

***Planning***From the ideas from their investigations, students are to design a model green cabin which will include:* a number of alternative designs
* how the final design will be produced and the materials used
* appropriate construction methods

***Evaluation***Students critique the final design of the working model green cabin based on their initial need, problem or challenge.* How well have the design brief requirements been met?
* How well do the student’s suggestions for modifications address the outcome?
* What impact can sustainable technologies have on the environment and society?
 | 1,2,3,4 | 1,2,3 |  | 1,3,4 | Folio format to be negotiated (written, visual, and oral).Insightful and thoughtful investigation of relevant information.Documentation should be a maximum of 800 words total (investigating, planning, and evaluation) or a maximum of 5 minutes of recorded multimedia material or equivalent.Use polished technical language at all times. |
| **Assessment Type 3: Product****Weighting 50%** | **Product - Green Cabin**Students are to critique, design and make a model green cabin. The major product has to be completely powered by renewable energy sources. Select and use a range of components, materials and equipment in a careful and effective manner while producing a Green Cabin.**Product record**Students will develop a product record focused on:* procedures used in the production of the project
* a reflection of the effectiveness of the product or system realisation process.
 |  | 4 | 1,2,3 | 2 | **Practical**Practical is to be undertaken under teacher supervision in workshop.Simulation and functional circuits must be submitted demonstrating skills in a highly proficient manner.**Product record**Negotiated presentation (written, visual, oral)Individual evaluation should be a maximum of 600 words, or a maximum of 3 minutes of recorded multimedia material or equivalent.Document a comprehensive evaluation of how well the design brief requirements have been met. |

***Four assessments.*** *Please refer to the Stage 1 Design and Technology subject outline.*