PRE-APPROVED LEARNING AND ASSESSMENT PLAN

**Stage 1 Digital Technologies**

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) |
|  |  |  |  | **1** | **D** | **G** | **T** | **10** | **A** |

**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 |  |

Stage 1 Digital Technologies (10-credit)

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** | **Focus areas: Programming / Exploring Innovations**  **Details of assessment** | **Assessment Design Criteria** | | | **Assessment conditions**  (e.g. task type, word length, time allocated, supervision) |
| --- | --- | --- | --- | --- | --- |
| **Computational Thinking** | **Development and Evaluation** | **Research and Ethics** |
| **Assessment Type 1: Project Skills**  **Weighting 70%** | **Exploring Innovation** (Collaborative) – Autonomous Vehicles  In groups of 2-3, students research the innovation of autonomous vehicles. They identify the main features that would be expected of a driverless car and how this technology could alter the way that passengers commute. Students research the impact that autonomous vehicles could have on road infrastructure and passenger safety. Finally students identify the ethical considerations associated with this innovation. | CT1 | DE2  DE3 | RE1 | 3 weeks of class time.  Students summarise findings, safety impacts, and ethical considerations and present their findings in a suitable format. |
| **Programming** (Individual) – Creating an Automated Vehicle  Students learn the skills to create a basic automated vehicle using a micro-controller system (Arduino, Raspberry Pi, etc). They analyse algorithms learnt and extensions required in applying them to their product. They identify the main components of their vehicle and create a design brief. They use deconstruction, abstraction and algorithmic design to identify the necessary features and components of the vehicle and create a design plan. Students use the design plan to create their vehicle, adapting the design as issues or new ideas arise. | CT2  CT3 | DE1 |  | 5 weeks of class time.  Design brief and plan, and automated vehicle, including an analysis of the algorithms required to implement.  Video presentation (maximum 5 minutes) that demonstrates the vehicle and an evaluation regarding the extent of the automation. |
| **Product Design Plan** (Collaborative) – Product Design Plan  Students will use the information explored in Task 1 and Task 2 to design a more advanced automation vehicle. Students will produce and present a more detailed design concept, which clearly shows modifications and extensions to their original project (Task 2). The product design must be complimented by a proposed development portfolio outlining their design process, and suggesting how the product design will serve as a solution to a real-world innovation. | CT1  CT2 | DE1  DE3 |  | 3 weeks of class time.  Digital solution concept design plan. Digital record of evidence. |
| **Assessment Type 2: Digital Solutions**  **Weighting**  **30%** | **Programming** (Individual) – Creating an Advanced Automated Vehicle  Students apply more advanced techniques to create a more advanced automated vehicle, or modify their existing vehicle, using a micro-controller system (Arduino, Raspberry Pi, etc), based on designs from Task 3. Students use deconstruction, abstraction and algorithmic design to adapt Task 3 design features and components of the vehicle and develop their own design plan (or may use the existing plans). Students use the design plan to alter their existing vehicle or develop an improved model, adapting the design as issues or new ideas arise. | CT2  CT3 | DE1  DE2 |  | 4 weeks of class time.   1. Design plan, including design changes. 2. Digital solution.   Presentation and evaluation of digital solution (maximum 3 minutes, or equivalent). |

***Four assessments.*** *Please refer to the Stage 1 Digital Technologies subject outline.*