Articulates with Program 2

LEARNING AND ASSESSMENT PLAN

**Stage 1 Chemistry**

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** | **C** | **E** | **M** | **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. |

**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 Chemistry (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) |
| --- | --- | --- | --- | --- |
| **IAE** | **KU** |
| **Assessment Type 1: Investigations Folio**  **Weighting 70%** | **Practical activity**  Half the class answers questions on ionic solutions and concentration of solutions while the other half carries out an experimental determination of the enthalpy of solution of NaCl using both hand-held thermometers and digital probes. They then swap to complete the other activity.  Each student writes a report in which they demonstrate their knowledge and understanding of concepts, display their results in an appropriate format, and evaluate both measurement methods, including a short discussion about the effect of the use of technology has on the efficiency of the process. | 2, 4 | 1, 3 | The task is completed individually under direct teacher supervision. Each student completes their own report at home. |
| **Science as a Human Endeavour Investigation: Acids and the Environment –** See assessment task exemplars  Students research one example of where acid rain caused major environmental damage during the last century. They then construct a presentation to show the causes of acid rain, the chemical reactions that produce rain with a low pH, the impacts of acid rain on the environment, and how the strategies now used to prevent acid rain forming from industrial practices. Reference sources must be acknowledged. | 3 | 1, 3, 4 | 110 minutes, research is completed outside of class. The presentation is constructed in class using concept mapping software. |
| **Practical Design Investigation: Galvanic Cells –** See assessment task exemplars  This investigation is in three parts.  In **Part A** students individually design an experimental procedure to investigate the effect of one factor (increased current, increased plate size, increased concentration of electrolyte) on an electrolytic cell They:   * identify a measurable quantity that will change with the change in conditions * pose a hypothesis * identify dependent and independent variables * consider factors that should be held constant and explain why and how they will attempt to control these factors * identify factors that may not be able to be controlled * list materials required * devise a procedure to be followed * consider how they will display and analyse data * identify safety considerations.   In **Part B** students will carry out the procedure in groups and individually record their results.  In **Part C** students will write a report in which they:   * display and analyse their data in order to justify a conclusion * evaluate their procedure to identify sources of uncertainty * discuss the impact, if any, that the sources of uncertainty have on their experimental results * consider ways in which the procedure could be improved. | 1, 2, 3, 4 | 4 | Students work individually for Part A and in groups for Part B. Students prepare their reports individually.  Three lessons are allocated for this investigation and all parts are completed in lesson time. The report is completed at home.  The report is a maximum of 1000 words. The materials/apparatus, method/procedure outlining steps to be taken, identification and management of safety risks, and results sections are excluded from the word count. |
| **Assessment Type 2: Skills and Applications Tasks**  **Weighting 30%** | **SAT: Test**  This test comprises multiple-choice and short-answer questions, and includes one extended response. Students:   * demonstrate their knowledge and application of the principles acids and bases, pH, metal reactivity, oxidation and reduction, electrochemistry (Galvanic cells), and stoichiometry (volume-volume) * solve problems of a range of difficulty and complexity, and posed in social and/or environmental contexts which may be familiar or new * undertake stoichiometric calculations and calculations involving the relationship: pH = -log[H+] * demonstrate science enquiry skills related to volumetric glassware and volumetric analysis * use appropriate chemical terms and conventions. | 4 | 1,2,4 | Time: 60 minutes  The test is completed individually under direct teacher supervision.  Students are provided with a periodic table of elements and a formula sheet. |

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