Curriculum and Assessment Plan: VCE Mathematical Methods

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| Senior secondary education provider details | |
| Senior secondary education provider name: |  |
| Submission number: |  |
| Contact name/s: |  |
| Contact details (email and telephone): |  |
| What is the accreditation period and title of the VCE study design being used to complete this document?  ***NOTE:*** *Please ensure that you use the study design that is accredited for the year that you plan to commence delivery.* |  |

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| **Schedule 8 – Minimum standards for registration to provide an accredited senior secondary course:**  **2 Student learning outcomes**  A senior secondary education provider that provides, or proposes to provide, an accredited senior secondary course must—   1. deliver the course to the standards established by the awarding body for the qualification; and 2. ensure that a student who satisfactorily completes all of the course requirements is entitled to be awarded the registered qualification.   **5 Teaching and learning**  A senior secondary education provider must have—   1. processes to ensure the consistent application of assessment criteria and practices; and 2. processes to oversee the conduct of assessments of the course including processes to conduct investigations and hearings and, if necessary, amend or cancel assessments.   *(Education and Training Reform Regulations 2017, Schedule 8.5)* | |
| **Evidence requirement** | Complete this template or provide a comparable curriculum and assessment plan for VCE Mathematical Methods as follows:   * for Units 1 to 4: a curriculum delivery plan identifying how students will meet the requirements of each outcome. * for Units 3 and 4: an assessment plan for each School-assessed Coursework (SAC) task. |
| **What the VCAA is assessing** | A senior secondary education provider must be able to demonstrate that the format and conditions of tasks used for school-based assessment meet the requirements of the relevant VCE study design, the VCE assessment principles and the VCAA’s administrative requirements.  This is an aspect of the process to ensure that:   * the course is being delivered to the standards established by the VCAA * students are able to satisfactorily complete the course * there is consistent application of assessment criteria and practices * there are compliant processes in place to oversee the conduct of assessments. |
| **Compliance is measured against** | * VCE study design applicable for the year of delivery * [VCE assessment principles](https://www.vcaa.vic.edu.au/curriculum/vce/Pages/VCEPoliciesandGuidelines.aspx) * any additional documents as prescribed in the study design and located on the study’s webpage; e.g. VCAA Bulletin items * the VCE Administrative Handbook, particularly the section ‘Scored assessment: School-based Assessment’. |
| **Resources** | * [VCE Mathematical Methods study page](https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/mathematicalmethods/Pages/Index.aspx) * [VCE assessment principles](https://www.vcaa.vic.edu.au/curriculum/vce/Pages/VCEPoliciesandGuidelines.aspx) * [VCE Administrative Handbook](https://www.vcaa.vic.edu.au/administration/vce-vcal-handbook/Pages/index.aspx) |

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| **Advice on completing these plans**   * A curriculum delivery plan for Units 1 and 2 or Units 3 and 4 must be completed for each unit the senior secondary education provider is applying for permission to deliver. Use the template provided. * For Units 3 and 4: an assessment plan for each task completed in Units 3 and 4 must be completed: application task, modelling or problem-solving tasks 1 and 2. * Senior secondary education providers that have established documentation in place; e.g. assessment tasks, are invited to attach these as appendices. |
| **Checklist**  Prior to submitting this document, ensure the following points are checked:  Correct study design is being used.  ***NOTE:*** *Please ensure that you use the study design that is accredited for the year that you plan to commence delivery.*  Correct outcomes, key knowledge and key skills are being taught and assessed.  Students have opportunity to demonstrate the key knowledge and key skills required to satisfactorily meet the requirements of each outcome within the units.  Examples of teaching and learning activities are outlined in the plan.  Assessment task types and requirements reflect specifications set out within the study design.  The conditions under which the task will be run are fair to all students.  Timing of assessment task/s and the time/s allocated to the task/s is fair.  Instructions provided to students about task/s are appropriate and clear.  Authentication management is appropriate. |

Units 1 and 2 Curriculum delivery plan

The following curriculum delivery plan must be completed for each unit the senior secondary education provider is applying for permission to deliver.

Demonstration of achievement of outcomes and satisfactory completion of a unit are determined by evidence gained through the assessment of a range of learning activities and tasks. Teachers must develop courses that provide appropriate opportunity for students to demonstrate satisfactory achievement of each outcome. The decision about satisfactory completion of a unit is distinct from the assessment of levels of achievement. Schools will report a student’s result for each unit to the VCAA as S (Satisfactory) or N (Not Satisfactory). In each VCE study, teachers and schools determine the assessment tasks to be used at Units 1 and 2.

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| UNIT 1 |
| **Outcome 1:** <insert outcome> |
| **Outcome 2:** <insert outcome> |
| **Outcome 3:** <insert outcome> |

Unit 1 Curriculum delivery plan

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| Provide details of the content: Areas of study, key knowledge and key skills *(from the study design)* | List and describe the learning activities that will be used to provide appropriate opportunity for students to demonstrate satisfactory achievement of the outcome | List and describe the assessment tasks that will be used to assess students’ level of achievement. Include an estimate of when each task will occur |
| **Area of Study 1:** Functions, relations and graphs | | |
| * <provide details of the content: Area of study, key knowledge and key skills> | <Consider a range of resources when developing appropriate learning activities; e.g. Support Materials found on the [VCE Mathematical Methods study page](https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/mathematicalmethods/Pages/Index.aspx). Ensure that any activities directly sourced from a public resource are contextualised to your school/provider’s approach> | <Select and describe as appropriate. See the VCE study design. Include an estimate of when the task will occur> |
| Area of Study 2: Algebra, number and structure | | |

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| Anticipated teaching time allocation: <specify term and weeks. For example: Term 1, weeks 1–2> | | |
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| Area of Study 3: Calculus |

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| Anticipated teaching time allocation: <specify term and weeks. For example: Term 1, weeks 1–2> | | |
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| Area of Study 4: Data analysis, probability and statistics |

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| Anticipated teaching time allocation: <specify term and weeks. For example: Term 1, weeks 1–2> | | |
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| Mathematical investigation |

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| Anticipated teaching time allocation: <specify term and weeks. For example: Term 1, weeks 1–2> | | |
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Unit 2 Curriculum delivery plan

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| UNIT 2 |
| **Outcome 1:** <insert outcome> |
| **Outcome 2:** <insert outcome> |
| **Outcome 3:** <insert outcome> |

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| Provide details of the content: Areas of study, key knowledge and key skills *(from the study design)* | List and describe the learning activities that will be used to provide appropriate opportunity for students to demonstrate satisfactory achievement of the outcome | List and describe the assessment tasks that will be used to assess students’ level of achievement. Include an estimate of when each task will occur |
| **Area of Study 1:** Functions, relations and graphs | | |
| **Anticipated teaching time allocation:** <specify term and weeks. For example: Term 1, weeks 1–2> | | |
| * <provide details of the content: Area of study, key knowledge and key skills> | <Consider a range of resources when developing appropriate learning activities; e.g. Support Materials found on the [VCE Mathematical Methods study page](https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/mathematicalmethods/Pages/Index.aspx). Ensure that any activities directly sourced from a public resource are contextualised to your school/provider’s approach> | <Select and describe as appropriate. See the VCE study design. Include an estimate of when the task will occur> |
| **Area of Study 2:** Algebra, number and structure | | |

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| Anticipated teaching time allocation: <specify term and weeks. For example: Term 1, weeks 1–2> | | |
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| Area of Study 3: Calculus |

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| Anticipated teaching time allocation: <specify term and weeks. For example: Term 1, weeks 1–2> | | |
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| Area of Study 4: Data analysis, probability and statistics |

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| Anticipated teaching time allocation: <specify term and weeks. For example: Term 1, weeks 1–2> | | |
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| Mathematical investigation |

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| Anticipated teaching time allocation: <specify term and weeks. For example: Term 1, weeks 1–2> | | |
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Indicate below, the range of assessment task types that will be used to address the three outcomes across the areas of study and topics, as well as how they will be assessed (i.e. marking scheme, rubric, criteria, other):

**Unit 1:** Click here to enter text.

**Unit 2:** Click here to enter text.

Units 3 and 4 Curriculum delivery plan

The following curriculum delivery plan must be completed for each unit the senior secondary education provider is applying for permission to deliver.

Demonstration of achievement of outcomes and satisfactory completion of a unit are determined by evidence gained through the assessment of a range of learning activities and tasks. Teachers must develop courses that provide appropriate opportunity for students to demonstrate satisfactory achievement of each outcome. The decision about satisfactory completion of a unit is distinct from the assessment of levels of achievement. Schools will report a student’s result for each unit to the VCAA as S (Satisfactory) or N (Not Satisfactory).

Specific information for Mathematical Methods

Indicate the topics and content to be covered from the areas of study with respect to the planned implementation for each of Unit 3 and Unit 4.

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| UNITS 3 AND 4 |
| **Outcome 1:** <insert outcome > |
| **Outcome 2:** <insert outcome > |
| **Outcome 3:** <insert outcome > |
| Unit 3 Curriculum delivery plan |

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| Provide details of the content: Areas of study, key knowledge and key skills *(from the study design)* | List and describe the learning activities that will be used to provide appropriate opportunity for students to demonstrate satisfactory achievement of the outcome | List and describe the assessment tasks that will be used to assess students’ level of achievement. Include an estimate of when each task will occur |
| **UNIT 3** | | |
| **Area of Study 1:** Functions, relations and graphs | | |
| **Anticipated teaching time allocation:** <specify term and weeks. For example: Term 1, weeks 1–2> | | |
| * <provide details of the content: Area of study, key knowledge and key skills> | <Consider a range of resources when developing appropriate learning activities; e.g. Support Materials found on the [VCE Mathematical Methods study page](https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/mathematicalmethods/Pages/Index.aspx). Ensure that any activities directly sourced from a public resource are contextualised to your school/provider’s approach> | <Select and describe as appropriate. See the VCE study design. Include an estimate of when the task will occur> |
| **Area of Study 2:** Algebra, number and structure | | |

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| Anticipated teaching time allocation: <specify term and weeks. For example: Term 1, weeks 1–2> | | |
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| Area of Study 3: Calculus |

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| Anticipated teaching time allocation: <specify term and weeks. For example: Term 1, weeks 1–2> | | |
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| Area of Study 4: Data analysis, probability and statistics |

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| Anticipated teaching time allocation: <specify term and weeks. For example: Term 1, weeks 1–2> | | |
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Unit 4 Curriculum delivery plan

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| Provide details of the content: Areas of study, key knowledge and key skills *(from the study design)* | List and describe the learning activities that will be used to provide appropriate opportunity for students to demonstrate satisfactory achievement of the outcome | List and describe the assessment tasks that will be used to assess students’ level of achievement. Include an estimate of when each task will occur |
| **UNIT 4** | | |
| **Area of Study 1:** Functions, relations and graphs | | |
| **Anticipated teaching time allocation:** <specify term and weeks. For example: Term 1, weeks 1–2> | | |
| * <provide details of the content: Area of study, key knowledge and key skills> | <Consider a range of resources when developing appropriate learning activities; e.g. Support Materials found on the [VCE Mathematical Methods study page](https://www.vcaa.vic.edu.au/curriculum/vce/vce-study-designs/mathematicalmethods/Pages/Index.aspx). Ensure that any activities directly sourced from a public resource are contextualised to your school/provider’s approach> | <Select and describe as appropriate. See the VCE study design. Include an estimate of when the task will occur> |
| **Area of Study 2:** Algebra, number and structure | | |

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| Anticipated teaching time allocation: <specify term and weeks. For example: Term 1, weeks 1–2> | | |
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| Area of Study 3: Calculus |

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| Anticipated teaching time allocation: <specify term and weeks. For example: Term 1, weeks 1–2> | | |
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| Area of Study 4: Data analysis, probability and statistics |

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| Anticipated teaching time allocation: <specify term and weeks. For example: Term 1, weeks 1–2> | | |
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What range of assessment task types will be used to address the three outcomes across the areas of study and topics? Indicate how they will be assessed (marking scheme, rubric, criteria, other).

**Unit 3:** Click here to enter text.

**Unit 4:** Click here to enter text.

Unit 3: Application task plan

In Units 3 and 4, specified assessment tasks are set by the VCE study design. Specified assessment tasks in Units 3 and 4 Mathematical Methods are School-assessed Coursework (SAC) tasks. The following plan needs to be completed for the Application task planned in Unit 3.

1. Outcome numbers and outcome statements

Click here to enter text.

1. List the specific key knowledge and key skills being assessed by this SAC task

Click here to enter text.

1. What are the proposed week/s of delivery for this SAC task (e.g. Term 1, Week 4)?

Click here to enter text.

1. How will the SAC task be structured?

Click here to enter text.

*Use the following questions to help shape the response:   
How will the task be constructed? E.g. The task will be made up of three parts of closed and open questions linked to a single context.  
How will the task be designed?   
What stimulus materials will be used? E.g. Students respond to stimulus materials based on contemporary material.  
How will the task cater for a range of high, medium and low responses?*

1. Explain how the SAC task meets the [VCE assessment principles](https://www.vcaa.vic.edu.au/curriculum/vce/Pages/VCEPoliciesandGuidelines.aspx) *(please refer to the document via the link to complete the response)*

Click here to enter text.

*How is the SAC task valid and reasonable?*

*How is the SAC task equitable?*

*How is the SAC task balanced?*

*How is the SAC task efficient?*

1. Outline the conditions under which the task will run (include information on the lesson allocation, the amount of time allocated to each SAC task, length of the SAC task/s, conditions under which the SAC task will be run, degree of supervision, access to resources.)

Click here to enter text.

*Example: 120 minutes over two periods*

*30 minutes: students access stimulus materials and can research and discuss during this time*

*Task distributed under test conditions*

*10 minutes: reading time*

*80 minutes: writing time (20 mins in one period, 60 mins the following period)*

1. What instructions will be provided to students about the SAC task?

Click here to enter text.

*What is printed on the SAC task coversheet given to students?*

1. What materials will students be able to use for the SAC task?

Click here to enter text.

*Example: Pens, highlighters, laptop, textbook or other materials for research purposes, handwritten notes)*

1. How will it be ensured that student work can be authenticated for this task?

Click here to enter text.

*Example: Students can read, discuss and research during initial 30 minutes. They can write notes and annotate their stimulus materials.*

*When reading time commences, all research materials will be removed. Students will be allowed to keep their annotated stimulus materials and written notes.*

*Explain how student notes will be authenticated (if applicable).*

*Students cannot remove materials after the end of the first period. They cannot bring in any new materials in the second period.*

*All notes and annotated materials will be submitted with the task.*

*If there will be multiple classes of this study, include information on how authentication of student work will be managed.*

*If materials available in the public domain will be used to create assessment tasks (e.g. commercially produced tasks, tasks used from previous years, past VCAA examination papers) explain how the materials will be modified to ensure student work can be authenticated.*

1. What assessment tool/s will be used to assess the SAC task?

Click here to enter text.

*Example: VCAA descriptors, Modified VCAA descriptors, Commercially developed marking guide, School-developed marking guide.*

Unit 4: Modelling or problem-solving task 1 plan

In Units 3 and 4, specified assessment tasks are set by the VCE study design. Specified assessment tasks in Units 3 and 4 Mathematical Methods are School-assessed Coursework (SAC) tasks. The following plan needs to be completed for the Modelling or problem-solving task 1 planned in Unit 4.

1. Outcome numbers and outcome statements

Click here to enter text.

1. List the specific key knowledge and key skills being assessed by this SAC task

Click here to enter text.

1. What are the proposed week/s of delivery for this SAC task (e.g. Term 1, Week 4)?

Click here to enter text.

1. How will the SAC task be structured?

Click here to enter text.

*Use the following questions to help shape the response:   
How will the task be constructed? E.g. The task will be made up of two or three parts of closed and open questions linked to a single context.  
How will the task be designed?   
What stimulus materials will be used? E.g. Students respond to stimulus materials based on contemporary material.  
How will the task cater for a range of high, medium and low responses?*

1. Explain how the SAC task meets the [VCE assessment principles](https://www.vcaa.vic.edu.au/Documents/vce/VCE_assessment_principles.docx) *(please refer to the document via the link to complete the response)*

Click here to enter text.

*How is the SAC task valid and reasonable?*

*How is the SAC task equitable?*

*How is the SAC task balanced?*

*How is the SAC task efficient?*

1. Outline the conditions under which the task will run (include information on the lesson allocation, the amount of time allocated to each SAC task, length of the SAC task/s, conditions under which the SAC task will be run, degree of supervision, access to resources.)

Click here to enter text.

*Example: 120 minutes over two periods*

*30 minutes: students access stimulus materials and can research and discuss during this time*

*Task distributed under test conditions*

*10 minutes: reading time*

*80 minutes: writing time (20 mins in one period, 60 mins the following period)*

1. What instructions will be provided to students about the SAC task?

Click here to enter text.

*What is printed on the SAC task coversheet given to students?*

1. What materials will students be able to use for the SAC task?

Click here to enter text.

*Example: Pens, highlighters, laptop, textbook or other materials for research purposes, handwritten notes)*

1. How will it be ensured that student work can be authenticated for this task?

Click here to enter text.

*Example: Students can read, discuss and research during initial 30 minutes. They can write notes and annotate their stimulus materials.*

*When reading time commences, all research materials will be removed. Students will be allowed to keep their annotated stimulus materials and written notes.*

*Explain how student notes will be authenticated (if applicable).*

*Students cannot remove materials after the end of the first period. They cannot bring in any new materials in the second period.*

*All notes and annotated materials will be submitted with the task.*

*If there will be multiple classes of this study, include information on how authentication of student work will be managed.*

*If materials available in the public domain will be used to create assessment tasks (e.g. commercially produced tasks, tasks used from previous years, past VCAA examination papers) explain how the materials will be modified to ensure student work can be authenticated.*

1. What assessment tool/s will be used to assess the SAC task?

Click here to enter text.

*Example: VCAA descriptors, Modified VCAA descriptors, Commercially developed marking guide, School-developed marking guide.*

Unit 4: Modelling or problem-solving task 2 plan

In Units 3 and 4, specified assessment tasks are set by the VCE study design. Specified assessment tasks in Units 3 and 4 Mathematical Methods are School-assessed Coursework (SAC) tasks. The following plan needs to be completed for the Modelling or problem-solving task 2 planned in Unit 4.

1. Outcome numbers and outcome statements

Click here to enter text.

1. List the specific key knowledge and key skills being assessed by this SAC task

Click here to enter text.

1. What are the proposed week/s of delivery for this SAC task (e.g. Term 1, Week 4)?

Click here to enter text.

1. How will the SAC task be structured?

Click here to enter text.

*Use the following questions to help shape the response:   
How will the task be constructed? E.g. The task will be made up of two or three parts of closed and open questions linked to a single context.  
How will the task be designed?   
What stimulus materials will be used? E.g. Students respond to stimulus materials based on contemporary material.  
How will the task cater for a range of high, medium and low responses?*

1. Explain how the SAC task meets the [VCE assessment principles](https://www.vcaa.vic.edu.au/Documents/vce/VCE_assessment_principles.docx) *(please refer to the document via the link to complete the response)*

Click here to enter text.

*How is the SAC task valid and reasonable?*

*How is the SAC task equitable?*

*How is the SAC task balanced?*

*How is the SAC task efficient?*

1. Outline the conditions under which the task will run (include information on the lesson allocation, the amount of time allocated to each SAC task, length of the SAC task/s, conditions under which the SAC task will be run, degree of supervision, access to resources.)

Click here to enter text.

*Example: 120 minutes over two periods*

*30 minutes: students access stimulus materials and can research and discuss during this time*

*Task distributed under test conditions*

*10 minutes: reading time*

*80 minutes: writing time (20 mins in one period, 60 mins the following period)*

1. What instructions will be provided to students about the SAC task?

Click here to enter text.

*What is printed on the SAC task coversheet given to students?*

1. What materials will students be able to use for the SAC task?

Click here to enter text.

*Example: Pens, highlighters, laptop, textbook or other materials for research purposes, handwritten notes)*

1. How will it be ensured that student work can be authenticated for this task?

Click here to enter text.

*Example: Students can read, discuss and research during initial 30 minutes. They can write notes and annotate their stimulus materials.*

*When reading time commences, all research materials will be removed. Students will be allowed to keep their annotated stimulus materials and written notes.*

*Explain how student notes will be authenticated (if applicable).*

*Students cannot remove materials after the end of the first period. They cannot bring in any new materials in the second period.*

*All notes and annotated materials will be submitted with the task.*

*If there will be multiple classes of this study, include information on how authentication of student work will be managed.*

*If materials available in the public domain will be used to create assessment tasks (e.g. commercially produced tasks, tasks used from previous years, past VCAA examination papers) explain how the materials will be modified to ensure student work can be authenticated.*

1. What assessment tool/s will be used to assess the SAC task?

Click here to enter text.

*Example: VCAA descriptors, Modified VCAA descriptors, Commercially developed marking guide, School-developed marking guide.*