

# Tranche 1 – Phase 3 – Initial Draft Course

## General Mathematics Level 3

Total Responses = 16

Organisations represented	Group	Individual
13	7 (representing 34 individuals)	9

## Focus Area and Key Features

Summary of key themes and way forward from feedback

Key themes	Years 9 to 12 Learning Response
26 individuals suggested the Focus Area section was appropriate but were concerned there was not enough detail.	Continue with course development as planned for this course to be a Discipline-based subject.

## Course Rationale and Description

Summary of key themes and way forward from feedback

Key themes	Years 9 to 12 Learning Response
28 individuals agreed the rationale did indicate why the course is needed. Four individuals suggested the rationale was 'too vague' as it did not specify which disciplines at tertiary level the course would provide a pathway for.  One individual did not understand why the rationale would make connections to the Australian economy and jobs market.	Continue with course development as planned for this section, ensuring that the four components outlined for the rationale are addressed clearly and concisely.

Key themes	Years 9 to 12 Learning Response
<p>32 individuals suggested the course document gave a clear overview for learners and no responses opposed this view.</p> <p>Six individuals indicated statistics is identified but is very limited in the course content which could be addressed in the course content section. Many tertiary offerings beyond this course involve survey and data handling, normal distributions and other statistical techniques.</p>	<p>Proceed with the course development as planned for this section but consider the recommendations in light of course content for amendments to the statistics content in this course.</p>

## Integration of General Capabilities

### Summary of key themes and way forward from feedback

Key themes	Years 9 to 12 Learning Response
<p>13 individuals agreed the General Capabilities identified are appropriate for the course while 21 did not believe they were appropriate.</p> <p>18 individuals suggested the identified General Capabilities were clearly embedded within the course content and outcomes, while 16 others raised concerns about the level of clarity.</p> <p>The General Capabilities 'Ethical Understanding' and 'Intercultural Understanding' proved to be the most contentious with 10 individuals asking for examples of how they would be embedded, and another seven individuals indicating they believed they were insufficiently trained in this area and feared there would be great inconsistency in teacher judgement based on subjectivity.</p> <p>Four individuals identified that Personal and Social Capability is currently only embedded into Learning Outcome 6 (Module 3) and they would like to see it more evident across the course.</p>	<p>Considering the proposed changes to eight (8) criteria in line with policy, the criteria will need to be reviewed.</p> <p>This will provide an opportunity to reconsider the inclusion of Ethical Understanding and Intercultural Understanding as embedded General Capabilities and to improve the explicit detail about the other included General Capabilities, particularly Personal and Social Capability and its relationship to Learning Outcomes and modules.</p>

## Pathways

### Summary of key themes and way forward from feedback

Key themes	Years 9 to 12 Learning Response
<p>22 individuals suggested there were no major pathways missing from the proposed course.</p> <p>10 individuals suggested there were major pathways missing. Of these 10, five indicated that given the high-level literacy demands of the proposed course there should be a prerequisite rating for Year 10 English.</p> <p>Another four individuals questioned the pathway relationship between the proposed Essential Mathematics 3 and this course.</p>	<p>Continue with course development as planned, ensuring that the course document values the Years 9-12 Education Framework principles of excellence, support and achievement.</p> <p>Review other non-English Level 3 courses and consider whether any changes are required to ensure the literacy demands are appropriate for the course.</p>

## Course Requirements

### Summary of key themes and way forward from feedback

Key themes	Years 9 to 12 Learning Response
<p>27 individuals agreed the access requirements were clear and logical.</p> <p>Five individuals did not agree, with another four asking for clearly specified pre-requisites for the course such as an Exceptional Achievement (EA) in General Maths – Foundation.</p>	<p>In Phase 4 Years 9 to 12 Learning will outline all the expected pathways into this course, noting that learners can access the course in Year 11 following on from Year 10 Australian Curriculum: Mathematics or in Year 12, after completing with General Mathematics 2.</p>
<p>Again, 27 individuals agreed the resource requirements were clear.</p> <p>Five individuals did not agree, with four of these questioning what technology would be allowed for graphing. They suggested that desktop computers would be required for graphing if not using graphics calculators and this would create an equity issue based on resourcing.</p>	<p>Noted, where graphics calculators are unavailable other technology resources can be utilised. This will be explored further in Phase 4 and the curriculum implementation guide.</p> <p>Years 9 to 12 Learning have a responsibility to enact the Ministerial declaration that, where applicable, courses will align to the Australian Curriculum senior secondary frameworks, which in this case, stipulates use of technology as outlined in the course.</p>

Key themes	Years 9 to 12 Learning Response
<p>27 individuals indicated that information in the course requirements may provide potentially unnecessary barriers for teaching and learning, but only 10 provided reasons why this was so.</p> <p>Six individuals queried when they would be provided with professional development, textbooks, sample assignments, tests, projects, exams and their solutions.</p> <p>The other four suggested access to computers, graphics calculators and the internet would prevent students from undertaking the course. They suggested many students at their school already access equipment through student assistance and identified they have less/no access to places such as CSIRO, UTAS, IMAS, Forestry etc. which will be inequitable given the strong investigative focus in this course.</p>	<p>Noted.</p> <p>Data sets for investigations are freely available from reputable websites including the ABS. Years 9 to 12 Learning will provide a list of suitable sources in the Curriculum Implementation Guide.</p>

## Course Structure, Delivery and Progression

### Summary of key themes and way forward from feedback

Key themes	Years 9 to 12 Learning Response
<p>32 individuals indicated the course structure was clear and logical. None disagreed.</p>	<p>Noted.</p>
<p>21 individuals indicated the delivery sequence is clear and logical. Eleven individuals disagreed with four of them suggesting the delivery and developmental progression statements are contradictory. Another four sought clarity as the phase 2 overview and key features had stated that the sequence may be prescribed.</p> <p>19 individuals suggested the developmental progression was clear and logical. Nine did not agree.</p>	<p>Review the language used in the developmental progression to remove any misleading or contradictory statements to the delivery sequence.</p> <p>Reinforce in Phase 4 that there is no prescribed sequence for the three modules.</p>

Key themes	Years 9 to 12 Learning Response
<p>Six individuals suggested that the order of implementation of courses and a timeline need to be provided. They also suggested that the General 2 course is not a foundation course for the new General 3 course.</p>	<p>Consider the language used to describe the relationship between the two General courses and level of complexity.</p> <p>Each course offers opportunities to undertake learning of the Australian Curriculum: General Maths syllabus at a level of complexity appropriate to the learner as stipulated by the Level of Complexity of the course.</p>
<p>23 individuals agreed it was clear how learners would engage with the three key features of a Discipline-based study course. Nine individuals indicated it was not clear.</p>	<p>Provide additional detail about Focus Area characteristics in supporting resources and professional learning.</p>

## Module Content

### Summary of key themes and way forward from feedback

Key themes	Years 9 to 12 Learning Response
<p>28 individuals indicated the key knowledge and skills were clear for each module. Only four disagreed. 18 individuals indicated there were no omissions or redundancies in the proposed course content. However, 14 identified concerns with the course content.</p> <p>The major omission of concern was Trigonometry and World Geometry. Seven individuals understood the rationale for removal based on the Australian Curriculum: General Mathematics curriculum, however, they asserted only a small number of students follow the two-year pathway in Tasmania, so many students would not engage with Trigonometry in General Mathematics 2.</p> <p>Another two individuals believed the removal of Trigonometry and World Geometry was regrettable as it was a unit enjoyed by most students.</p>	<p>Engage Critical Friends and Sponsor Schools to review the areas of concern regarding content in both this and other proposed courses.</p> <p>Align to provide the best possible pathways with content that is aligned to the level of complexity for each course, whilst noting the policy position to align with the Australian Curriculum: General Mathematics Units 3 and 4.</p> <p>Any deviation will need to have careful consideration and clear rationale for what is best for Tasmanian context.</p>

The major inclusion of concern was the Probability content with multiple individuals suggesting that an inclusion of further statistical analysis such as standard deviation and using normal distributions would be more beneficial for students continuing to tertiary studies.

Additional concerns raised by a small number were the inclusion of share market concepts and the removal of straight-line depreciation as a comparative model to reducing balance depreciation.

## Criteria and Standards

### Summary of key themes and way forward from feedback

Key themes	Years 9 to 12 Learning Response
<p>Many suggested the concept of less criteria and fewer elements per criteria is an improvement. However, most individuals could not see a reason for focus criteria per module, meaning that criteria assessing processes such as 'communication and management of self' and 'learning' were only assessed at one point in the year, and would prefer they are addressed throughout the year.</p> <p>Similarly, most individuals questioned the weighting of criteria between 'procedural fluency and performing mathematical techniques' and 'problem solving and reasoning'.</p> <p>Some individuals indicated that some elements would require too much teacher judgement and concrete examples would be needed to differentiate between standards/or the elements would need to be reworked.</p> <p>On balance, the standards were deemed to facilitate clear progressions for Criteria 1-5, however Criterion 6 was not strongly supported.</p>	<p>Considering the feedback received and the proposed changes to eight (8) criteria in line with policy, the criteria will need to be reviewed.</p> <p>Instances where the language may require additional examples to assist teacher judgement will be reviewed to provide greater clarity.</p> <p>Engage Critical Friends and Sponsor Schools to review the areas of concern regarding criteria and standards in both this and other proposed courses. Align to provide the best possible assessment of the learning outcomes that are aligned to the Level of Complexity for each course.</p> <p>Careful consideration will need to be undertaken to unpack and improve the progression of standards for the current Criterion 6 under any guise it takes in the new set of eight (8) criteria.</p>

## Appendix 1 - Line of Sight

### Summary of key themes and way forward from feedback

Key themes	Years 9 to 12 Learning Response
<p>27 individuals indicated the Line of Sight was clear, however, five individuals did raise the concern that the weighting of criteria as described above was a significant shift from the current course.</p> <p>14 individuals raised concerns that the learning outcomes should more strongly reflect the content included in the course, and as such were uncomfortable with the proposed criteria.</p>	<p>Noted.</p> <p>Ensure the Line of Sight remains clear after reviewing the content, criteria and standards for Phase 4 of the course development process.</p>

## Appendix 2 – Alignment to Curriculum Frameworks

### Summary of key themes and way forward from feedback

Key themes	Years 9 to 12 Learning Response
<p>18 individuals indicated the alignment to the Australian Curriculum framework was useful.</p> <p>One individual suggested that the Australian Curriculum framework has been used to justify the changes without indicating whether those changes were necessary.</p> <p>Five individuals suggested that the Learning Outcomes of this new course are not in line with the learning outcomes stated in the Australian Curriculum.</p>	<p>Noted.</p> <p>Continue to refine the content to align to Level 3 complexity, and to best situate Tasmanian learners to complete the Australian Curriculum General Mathematics Units 3 and 4 content and to be assessed against learning outcomes that reflect those in the Australian Curriculum framework.</p>



## Appendix 3 – Work Requirements

### Summary of key themes and way forward from feedback

Key themes	Years 9 to 12 Learning Response
<p>28 individuals indicated the Work Requirements were not appropriate for each module.</p> <p>Most individuals' concerns were that the word counts were too high and would turn students off undertaking the course.</p> <p>They also identified that other subjects are proposing similar size work requirements and the students whole course load should be considered.</p> <p>Additionally, it was suggested teachers would need a range of resources/ activities/ tasks provided, plus extensive professional learning.</p>	<p>Noted.</p> <p>Engage Critical Friends and Sponsor Schools to review the areas of concern regarding work requirements in both this and other proposed courses. Align to provide the best possible requirements that promote consistent and measurable assessment of the learning outcomes that are aligned to the Level of Complexity for each course.</p> <p>Consideration for the size, mode and timing of Work Requirements will be important to ensure students and teachers study/workload is fair and reasonable. An additional factor for consideration will include alignment with other jurisdictions work requirement expectations.</p>

## Further Appendices

### Summary of key themes and way forward from feedback

Key themes	Years 9 to 12 Learning Response
<p>Nine individuals agreed the further appendices support the course document. One individual disagreed.</p> <p>This individual suggested that Appendix 4 talks about what the General Capabilities and Cross-Curriculum priorities are but does not provide any detail on what they mean and how to embed them into practice.</p>	<p>Considering the proposed changes to eight (8) criteria in line with policy, the criteria will need to be reviewed. This will provide an opportunity to reconsider the inclusion of Ethical Understanding and Intercultural Understanding as embedded General Capabilities and to improve the explicit detail about the other included General Capabilities.</p> <p>This will inform whether further support is required for integration of the General Capabilities with course content and where this information would best be provided.</p>



## Further Feedback and General Comments

### Summary of key themes and way forward from feedback

Key themes	Years 9 to 12 Learning Response
<p>Eight individuals indicated concern about the timeline of implementing this course for teaching in 2022.</p>	<p>Feedback about the implementation timeline has been received more broadly than this course and Years 9 to 12 Learning have delayed the implementation of this and many other courses until 2023</p>
<p>Seven individuals wondered what an external exam would look like, given the emphasis on problem solving and longer tasks in the internally assessed components.</p> <p>They also asked for clarity around what types of questions are of an A, B or C standard to prepare students for an external exam.</p>	<p>Proposed external assessment specifications will be included in Phase 4.</p> <p>Consideration for how to best support teachers with clarity about question types and tasks for internal assessments will be undertaken when developing support resources for the course.</p>