SUBJECT: Workplace Maths TQA level 2.

PURPOSE: To seek accreditation of the proposed courses.

BACKGROUND: At its meetings of 4 April 2012 (Agenda Item 2.1) and 6 June 2012 (Agenda Item 2.3.3 and 2.3.7) the Authority made a set of decisions regarding the use of ACARA-developed content and achievement standards in relevant English, mathematics and science courses required for 2014. A replacement course for Workplace Maths (expiring 31 Dec 2013) was recommended. This would draw on ACARA Essential Mathematics Units 1/2 content, with additional depth to justify a size value 15.

The Office undertook to utilise the relevant ACARA content to publish a course outline for general comment during the period 23 July – 13 August 2012. Six (6) responses were received, variously from groups of teachers, individuals, and providers. Comments related to various elements of the course documentation were considered and draft criteria were developed to align with ACARA standards. A draft course document was published for general comment on 22 November 2012. Responses were received from teacher meetings in the north and south of Tasmania in December 2012, suggesting amendments to the content, (two (2) comments), and to two criterion standard elements.

At its meeting of 6 February 2013 (Agenda Item 2.3) the Authority adopting as a basis for its planning and actions in 2013-2016 the decisions taken by Ministerial Council on December 7 2012 in relation to the Australian senior secondary curriculum.

A revised Workplace Maths course was developed incorporating amendments suggested in the feedback from the November 2012 draft course, and to include reference to the expectations defined by the national content standards. This was published for comment as an exposure draft, released as part of the accreditation process in the period 8 – 31 May 2013. Zero (0) responses were received.

The proposed course has been analysed against the TQA’s course accreditation criteria (see Attachment A). The Office has responded to the analysis as follows:

• On considering comments received in the analysis, and further checking of standard elements against issues noted in Appendix F of the Course Writer’s Guide, minor amendments to some wording in the criterion standards have
been made to clarify meaning or to exclude terms such as ‘independent’, ‘attempt to’.

- Based on comments received in the analysis about the lack of clarity regarding what content is, and is not, compulsory, plus the lack of clarity regarding the sequence for delivery of content, a clarifying statement has been inserted under the heading ‘Course Description’
- Based on the comments made in the analysis and the further refining of the document headings, a pathway description has been added to include the possible pathway from Everyday Maths, TQA level 1, to this course, and the information regarding the recommended Grade 10 rating inserted under the newly created heading ‘Access’.

CURRENT SITUATION: The following course document is ready for accreditation consideration (Attachment B):

<table>
<thead>
<tr>
<th>New course:</th>
<th>Replacing:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workplace Maths TQA 2 size value 15</td>
<td>Workplace Maths TQA 2 size value 15</td>
</tr>
</tbody>
</table>

ISSUES: Nil.

RECOMMENDATIONS: That the course be accredited for use from 1 Jan 2014 until 31 Dec 2018 (ie five years).

That the course be assigned a robustness level of 3.

That the course be assigned the following characteristics for the TCE:

<table>
<thead>
<tr>
<th>Course:</th>
<th>TCE Contribution:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workplace Maths TQA 2 size value 15</td>
<td>level/credit points towards participation and achievement standard for PA or higher</td>
</tr>
<tr>
<td></td>
<td>TQA 2, 15 credit points</td>
</tr>
<tr>
<td></td>
<td>TCE Contribution:</td>
</tr>
<tr>
<td></td>
<td>‘Everyday Adult’ standard for SA award or higher</td>
</tr>
<tr>
<td></td>
<td>Mathematics</td>
</tr>
</tbody>
</table>

PREPARED BY: Jennifer Earle
Project Officer, TQA

Date: 28 June 2013
**Acting under delegation from the Tasmanian Qualifications Authority to accredit senior secondary courses.**

Delegation to the CEO of the power to make accreditation decisions under Section 26 is limited to those cases which meet the conditions below:

<table>
<thead>
<tr>
<th>Delegation Conditions</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>The course proposed clearly fits all the criteria for accreditation established by the Authority.</td>
<td>The proposed course meets the Authority’s <em>Senior Secondary Course Accreditation Criteria</em>. See Attached Reports.</td>
</tr>
<tr>
<td>Accreditation of the proposed course is consistent with Authority policy decisions, including the need to streamline the number of courses.</td>
<td>At its meetings of 4 April 2012 (Agenda Item 2.1), 6 June 2012 (Agenda Item 2.3.3 and 2.3.7), and 6 February 2013 (Agenda Item 2.3) the Authority decided on the basis for the replacement course.</td>
</tr>
<tr>
<td>An assessment of risk to the Authority’s reputation of a decision to accredit the course is agreed in consultation with the Chair of the Authority to be low.</td>
<td>The CEO and the Chair of the Authority met on 3 July 2013. It was agreed that accreditation of these proposed courses was low risk.</td>
</tr>
<tr>
<td>Course accreditation will only be carried out by delegation when the decision is positive (all refusals will be made by the Authority meeting) and in full compliance with Authority policy decisions</td>
<td>The recommendation is for a positive decision (i.e. accreditation).</td>
</tr>
<tr>
<td>Proposals for new courses, unless previously decided by the Authority, whether or not fully compliant in all other respects, will fall outside the delegation</td>
<td>The proposed course replaces an existing one. It is not a ‘new’ course.</td>
</tr>
<tr>
<td>Cases where there is not agreement that the risk to the Authority’s reputation is low would fall outside the delegation.</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Signed by Dr Reg Allen  
CEO, Tasmanian Qualifications Authority  
Date: 3 July 2013

Acting under delegation from the Tasmanian Qualifications Authority to accredit senior secondary courses.
Attachments:

A: Analysis of Proposed Course
B: Proposed Course Document
### ATTACHMENT A: ANALYSIS OF PROPOSED COURSE

**TQA Senior Secondary Course Accreditation Report**

**On Exposure Draft Course Document**

<table>
<thead>
<tr>
<th>Course:</th>
<th>Workplace Maths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Proponent:</td>
<td>TQA</td>
</tr>
<tr>
<td>Evaluator(s):</td>
<td>‘X’</td>
</tr>
<tr>
<td>Evaluation Date:</td>
<td>4 June 2013</td>
</tr>
</tbody>
</table>

**Accreditation History:**
First accredited 1st October 2008 for use in 2009 – 2013. Modified 1 September 2011 to criteria standard elements, quality assurance and course evaluation, and addition of ‘Relationship with the Australian Core Skills Framework (ACSF)’.

**Evaluation History:**
Evaluation ongoing and informed modifications 1/9/11

---

1. **Rationale**

   The proposed course has a clearly identifiable rationale which includes consideration of strategic need, demand, coherence and increasing student participation/achievement including appropriate consultation with stakeholders. *Workplace Maths* represents a vast improvement in the provision of an applied maths model to the senior secondary curriculum that is relevant to everyday practical mathematics needs. *Workplace Maths* represents an honest and straightforward attempt to develop maths related skills that are precisely what are required in modern workplaces. The course content directly addresses the desperate need to lift state numeracy rates (currently under 50% of adults can effectively use numeric skills!). Course developers are to be applauded!

2. **Coherence**

   **2.a General Coherence**

   The proposed course
   
   - must have educational aims and learning outcomes appropriate for students in the senior secondary phase of education in Tasmania; and
   - must be at least at the equivalent of the types of competencies characteristic of AQF Cert I; and
   - has a balance of learning of both domain-specific and generic skills and knowledge
   - meets the TQA’s specifications document (if applicable).

   The educational aims and learning outcomes are highly appropriate to students requiring a maths qualification that enhances their skills for the world of work.

   Content correctly identifies those high-demand workplace mathematical and numeracy skills – the set of basic calculation skills, essential mental arithmetic skills, skills in estimating including estimating the likely correctness of a result, appropriate use of fractions, ratios and rates.

   The proposed degree of difficulty aligns well with TQA Level 2 and the planned duration (or size value of 15) makes it a likely year long course which could be taken at either year 11 or 12 and that complements other vocationally oriented programs.

   It effectively balances essential mathematical knowledge and skills against a more diverse capacity for generic application in workplace, community and personal life-space activity.
2.b Internal Coherence

- there is clarity regarding what content is compulsory, and what (if any) is optional. Language used reflects this (eg ‘must’ or ‘will’ not ‘should’ or ‘could’)

- (if applicable) the degree of optional content (eg choice between units/topics) is limited. Options allow for some specialisation, but there is a significant ‘core’ of common content

- there is clarity regarding the sequence for delivery of content (eg notations to say if the order in which contents listed in the document reflects compulsory or suggested delivery sequencing)

- there is a clear match between the stated Learning Outcomes Content and Criteria/Standards.

Note: while some Learning Outcomes may be aspirational (non-assessed, eg ‘develop a positive attitude towards…) the number of such objectives is limited. Overwhelmingly there is a clear match between the outcomes and the criteria/standards.

2.c Coherence with other courses

- if applicable, there are clear linkages between a TQA 3 course and a ‘Foundation’ course at level 2 (or other specified TQA accredited pathway courses).

Note: a ‘Foundation’ course is not a simplified or ‘easier’ version of a TQA 3 course. It has its own distinctive features (content, standards, criteria etc) but prepares students who wish to study at TQA 3 in the same/

There are no rules regarding compulsory content. The strength of the course lies in the infinite variety in which learning tasks can be contextualised within real-world scenarios.

The sequencing of topics is logical and builds in logical fashion from acquiring and developing the basic set of calculating skills through to measurement in a variety of contexts, depiction of calculated results through to applications to money, time and distance and speed and navigation.

While there are no specifications about sequencing of topics there is inherent sense in the way in which they are sequenced. Effective learning might be compromised a little if, for example, reverse-sequencing was applied, though it is unlikely that this would affect successful completion of the course.

Learning Outcomes, Content and Standards appear to align well. Course objectives/planned learning outcomes are likely to be more than adequately realised through the course content. Criteria for assessment match planned learning outcomes well without restricting the inherent design flexibility in the course content delivery.

The language used to describe assessment criteria is easily understood, though a couple of suggested amendments have been included in the course edit.

While the recommended pathway for most students will be from at least a Grade 10 ‘D’ Achievement Standard in the Australian Curriculum Mathematics there is the potential for students successfully completing Everyday Maths TQA 1 to continue on to Workplace Maths.
### Overlap with other courses

Does the proposed course duplicate, by titles or coverage

- other TQA senior secondary accredited courses? or
- nationally accredited VET courses?

If relevant, does the course document identify where any outcomes meet the requirements of VET units of competence in Training Packages to the extent that a learner may reasonably expect an RTO to grant direct recognition (RPL, credit transfer) for those units on the basis of successful achievement in the TQA accredited course.

**Note:** At its meeting of August 2012 the Authority adopted the following guidelines for the implementation of its policy about overlap between VET and TQA accredited courses:

- a course accreditation report must identify any potential overlap between the content (skills, knowledge, competencies, learning outcomes) of the course and the skills, knowledge required in competencies of training packages
- where a proposed course has content that appears to be the same as that in a Training Package but is intended to be different, the course must be explicit about the nature of this difference
- a proposed course that includes content found in competencies in VET training packages may be accredited where the Authority considers the requirements of its delivery as VET to Tasmanian senior secondary students are insufficiently relevant to the achievement of the intended outcomes (For example, reading and writing skills at Australian Core Skills Framework levels 1-3 are not clearly and distinctly different across everyday adult contexts including work to the

The course does not duplicate other maths related TQA courses.

There is the potential for elements of the course content to be recognised in FSK20113 Certificate II in Skills for Work and Vocational Pathways delivered under the Foundation Skills Training Package. For example unit of competence FSKNUM14 Calculate with whole numbers and familiar fractions, decimals and percentages for work could be delivered particularly if linked with a VET qualification being undertaken as part of a student’s workload.

There is also the potential for recognition of prior learning principles to apply probably to a range of Certificate II qualifications where units of competence around workplace numeracy exist.

However the Workplace Maths course is not primarily a VET course, there is no mandated workplacement and so the issue of VET recognition is really not an issue.
<table>
<thead>
<tr>
<th><strong>Extent that assessment requires current industry competence</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>in accrediting a course with content found in competencies in VET training packages the Authority will decide the support (course requirements and quality assurance) for relevant RPL, credit transfer or articulation.</td>
<td></td>
</tr>
</tbody>
</table>

4. **Assessment**

- there is clarity regarding any prescribed assessment instruments and work requirements

- the standards are expressed in clear, unambiguous language (e.g. it is not acceptable that standards are expressed in terms such as 'sound understanding = C, good understanding = B'). The standards must clearly describe **features/characteristics** of the evidence of student work required by the standard. *Note: panel to check criteria and all standard elements against issues noted in Appendix F of the Course Writer’s Guide and make comments here*

- (if applicable) the standards are comparable with ACARA/CCAFFL/VET standards in regard to their level of complexity and wording

- the degree of difficulty/complexity of the standards and the range of criteria are comparable with those in accredited courses in the same/similar learning area and level of complexity/size value

*Note courses used for comparison and comments. Courses can be found at [http://www.tqa.tas.gov.au/1053](http://www.tqa.tas.gov.au/1053). Those used for comparison should be in the same/similar ASCED sector, be of the same TQA level. Those most recently accredited are*

---

Please refer to the attached draft course for detailed edited comments on standards for assessment criteria.

Note in particular that standards for Criterion 2 (p 14) are incomplete.

Also standards for Criterion 8 (p 20) incomplete.

The proposed standards have been amended in line with agreed specifications. They match the purpose and intent of the course and will encourage a range of applied and real world assessment strategies.

The wording and general language in which standards are expressed are consistent with those used within National Training Packages.

The standards are in line with ACARA standards for year 10 mathematics – there are no year 11 and 12 maths courses as yet. They are also consistent with the rationale provided for year 11 and 12 General Mathematics.

The standards are consistent with other TQA maths courses in terms of language, degree of difficulty, assessment approaches and course content.

It will cater to a different student/client group to MTA215109 Mathematics Applied- Foundation despite both courses being TQA Level 2. Workplace Maths is clearly distinguished by its identification of mathematical knowledge and skills directly applicable to workplace settings. MTA215109 develops more generic mathematical knowledge and skills derived from traditional maths methodology.
5. **Labelling and terminology**
The names used in courses and for results (awards) are simple, plain, readily understandable by practitioners and do not mislead reasonable persons.

Are the names used for awards/title consistent with current TQA practice?

The course title *Workplace Maths* is appropriate and commendable – see earlier comments.

Course nomenclature is straightforward – again commendably so – and the language describing objectives, content and assessment is clear, precise and accurate.

There is ample evidence of effort to write the course in inclusive terms, again commendably so.

---

6. **Delivery**
The methods of delivering the proposed course are likely to achieve the purposes, aims and learning outcomes of the course.

Given that the proposed course’s aim “…is to provide students with the mathematical knowledge, skills and understanding to solve problems in real contexts for a range of workplace, personal, further learning and community settings” (p 2) then delivery needs to take account of access to real world settings. However, this shouldn’t be too much of a problem if the client group are likely to be involved in other work-readiness or applied learning programs. There are no specific requirements for access to workplace settings – in this respect it is appropriate that it is an alternative to VET programs where workplace participation is generally a given.

---

7. **Access**
(If applicable) any limitations to access based on age, gender, employment, cultural, social or educational background are explicit, clearly stated and justified.

There are no likely perceived limitations to access. It is in fact gender neutral in choice of illustrative examples, a commendable achievement.

---

8. **Quality Assurance**
The assessment processes to be used to determine whether a student has achieved the learning outcomes of the course are of standard sufficient to deliver

- a match between the standards for achievement specified in the course and the standards demonstrated by students; and

The proposed Quality Assurance approach is appropriate and when applied should be able to identify if student performance and achievement matches intended learning outcomes and required standards.

The proposed QA approach is consistent with QA approaches generally adopted and used by the TQA.

The integrity of the qualification may be determined in
- a level of comparability of results/awards essentially the same as for all other Authority accredited courses; and

- community confidence in the integrity and meaning of results.

part by the mathematical competence displayed in employment settings by students who have achieved it. It has the potential to become a qualification sought after by employers once they become aware of it.

9. **Resource Requirements**

- What, if any, special requirements are there for providers of the course (eg special equipment, resources)?

- Are these clearly described?

- What requirements are there for the TQA (eg quality assurance, external assessment)?

Delivery of this course is unlikely to require resources over and above those generally needed in classroom based courses. It does presume that students will have access to computer and digital support. Delivery of the course is likely to be enhanced with workplace and community site visits where appropriate, but again this is at the discretion of the provider and there is no mandatory requirement.

There are no obvious resource implications for the TQA’s QA processes in monitoring the delivery of this course.

10. **Evaluation**

The proposed course must identify
- course evaluation processes.

It is advisable that feedback be sought from those delivering the course during its accreditation cycle.

11. **Size/Complexity**

- Are the level of complexity and size value of the course clearly described?

- Does the ‘amount’ of content/assessment regime match the size value indicated?

- Does the nature/aim/purpose of the course, its content, learning outcomes and assessment standards match the characteristics of the learning at this level of complexity? (see paragraph in course size and complexity section of the course document for these characteristics).

The size value of 15 and complexity level of 2 match quite appropriately the course content and inherent complexity of learning tasks and outcomes as specified in the course.

12. **Qualifications**

- List the qualifications (including award types) to be conferred on successful completion of the

The qualification for which successful completion of this course will entitle the student/client to is Workplace
### course
- Is this information included in the course documentation?

Maths TQA Level 2 with the range of award levels specified as Exceptional Achievement, High Achievement, Commendable Achievement, Satisfactory Achievement and Preliminary Achievement.

This information is included in the course documentation.

### Overall Observations
This is a welcome addition to the range of maths courses traditionally provided by the TQA and its predecessors. It will be a welcome program for those students who already demonstrate reasonable mathematical and numeracy skills but who don’t want to continue with pre-university maths or their watered-down variants. It has a commendable applied mathematical focus across skill areas commonly demanded by employers across a wide range of industries.

### Additional
ATTACHMENT B: PROPOSED COURSE DOCUMENT

Please visit www.tqa.tas.gov.au/3435 to access the course document.