

22454VIC

Course in Safe Use of Machinery for Technology Teaching

This course has been accredited under Parts 4.4 of the Education and Training
Reform Act 2006.

Accredited for the period: 1 January 2018 to 31 December 2022

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Section A: Copyright and course classification information

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|--|---|
| <p>1. Copyright owner of the course</p> | <p>Copyright of this document is held by the Department of Education and Training, Victoria</p> <p>© State of Victoria (Department of Education and Training) 2017</p> |
| <p>2. Address</p> | <p>Executive Director Industry Engagement and VET Systems Higher Education and Skills Group Department of Education and Training (DET) GPO Box 4367 Melbourne, Vic. 3001</p> <p><u>Organisational Contact:</u> Manager Training Products Higher Education and Skills Group Telephone: (03) 9637 3092 Email: course.enquiry@edumail.vic.gov.au</p> <p><u>Day-to-Day Contact</u> Curriculum Maintenance Manager - Engineering Industries Box Hill Institute of TAFE Private Bag 2014 Box Hill , Vic 3128 Ph : 03 9286 9880 Fax : 03 9286 9991 Email : g.adda@bhtafe.edu.au</p> |
| <p>3. Type of submission</p> | <p>This course is being submitted for re-accreditation.</p> |
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| <p>6. Course accrediting body</p> | <p>Victorian Registration and Qualifications Authority</p> |
| <p>7. AVETMISS information</p> | <p>ANZSCO code - 2414 Secondary School Teachers</p> <p>ASCED Code – 0701 Teacher Education</p> <p>National course code - 22454VIC</p> |
| <p>8. Period of accreditation</p> | <p>1 January 2018 – 31 December 2022</p> |



Section B: Course information

| | | |
|---|---|--|
| 1. Nomenclature | | Standard 1 AQTF Standards for Accredited Courses |
| 1.1. Name of the qualification | Course in Safe Use of Machinery for Technology Teaching. | |
| 1.2. Nominal duration of the course | 22 - 40 hours. | |
| 2. Vocational or educational outcomes | | Standard 1 AQTF Standards for Accredited Courses |
| 2.1. Purpose of the course | <p>The course has been developed to provide secondary school technology teachers with the knowledge and skills to:</p> <ul style="list-style-type: none"> • apply principles and legal requirements of WHS/OHS to the technology teaching environment • safely operate a range of machinery (woodwork and/or metalwork) • identify, assess and control hazards when working with machinery in a classroom setting • undertake basic and/or preventative machinery maintenance • transfer safe operating principles to a range of machines • select and use appropriate personal protective equipment. <p>The course is confined to the safe use of machinery for technology teaching and is not intended to provide teachers with the vocational competencies to operate machinery in a non-school environment.</p> | |
| 3. Development of the course | | Standards 1 and 2 AQTF Standards for Accredited Courses |
| 3.1. Industry / enterprise/ community need | <p>The purpose of this course is to provide secondary school technology teachers with training to safely operate a range of wood and/or metal work machinery in a technology classroom environment. The initial need was based on a knowledge and skills gap in secondary teacher training, the need to reduce the risk of injuries to teachers and students and the Victorian Department of Education and Training (DET) requirement to meet its' duty of care obligations under the Occupational Health and Safety Act of 2004.</p> <p>Technology teachers who provide student-instruction in woodwork and metalwork are required to set up and operate a range of machinery, to prepare materials for classroom activities. Also they provide instruction and supervision of students using various electrically powered portable and stationary machines such as metalwork or woodwork lathes, band saws, routers, grinders etc. In addition, technology teachers can be required to undertake basic and/or preventative maintenance of the various portable and stationary machines in their teaching areas.</p> | |

| | | | | | | | | | | | | | | | | | | | | | |
|---|--|---------------------|----------------------------|-------------|------------------------------|-------------|--|------------|---|---------------|--|---------------|--|----------------|----------------------------------|----------------|--|-------------|------------------------------|--------------|------------------------------|
| | <p>The course has been designed to initially provide a sound working knowledge of occupational, health and safety requirements, risk management and emergency response in accordance with DET/school policy and procedures. This is followed by training in the setting up, safe operation and basic maintenance of a typical range of woodwork and/or metalwork portable and stationary machines normally used in a technology teaching environment.</p> <p>Since the introduction of the course, there has been a consistent delivery history by a small number of registered training organisations at the statewide level. The Department has forecasted that future enrolments will remain steady with approximately 120/130 teachers per year.</p> <p>The three competencies in the course were developed specifically for the purpose stated above and were confirmed by the Course Reference Group. They do not duplicate units within any endorsed training package.</p> <p>The review of the existing course and preparation of the new course curriculum was managed by the CMM - Engineering Industries in conjunction with an existing Course Reference Group with representation from key stakeholders. Members of the Group are:</p> <table> <tr> <td>Mark Natoli (Chair)</td> <td>Sunshine Secondary College</td> </tr> <tr> <td>Max Andrews</td> <td>Holmesglen Institute of TAFE</td> </tr> <tr> <td>Jill Livett</td> <td>Design and Technology Teachers Association</td> </tr> <tr> <td>Neil Uwins</td> <td>Victorian Association of State Secondary Principals (Fountain Gate Secondary College)</td> </tr> <tr> <td>George Peters</td> <td>Department of Education and Training (DET)</td> </tr> <tr> <td>Glenn Eckardt</td> <td>Department of Education and Training (DET)</td> </tr> <tr> <td>Carolyn Clancy</td> <td>Australian Education Union (AEU)</td> </tr> <tr> <td>Leanne Compton</td> <td>Victorian Curriculum and Assessment Authority (VCAA)</td> </tr> </table> <p><i>In attendance:</i></p> <table> <tr> <td>George Adda</td> <td>CMM – Engineering Industries</td> </tr> <tr> <td>Trevor Lange</td> <td>CMM – Engineering Industries</td> </tr> </table> | Mark Natoli (Chair) | Sunshine Secondary College | Max Andrews | Holmesglen Institute of TAFE | Jill Livett | Design and Technology Teachers Association | Neil Uwins | Victorian Association of State Secondary Principals (Fountain Gate Secondary College) | George Peters | Department of Education and Training (DET) | Glenn Eckardt | Department of Education and Training (DET) | Carolyn Clancy | Australian Education Union (AEU) | Leanne Compton | Victorian Curriculum and Assessment Authority (VCAA) | George Adda | CMM – Engineering Industries | Trevor Lange | CMM – Engineering Industries |
| Mark Natoli (Chair) | Sunshine Secondary College | | | | | | | | | | | | | | | | | | | | |
| Max Andrews | Holmesglen Institute of TAFE | | | | | | | | | | | | | | | | | | | | |
| Jill Livett | Design and Technology Teachers Association | | | | | | | | | | | | | | | | | | | | |
| Neil Uwins | Victorian Association of State Secondary Principals (Fountain Gate Secondary College) | | | | | | | | | | | | | | | | | | | | |
| George Peters | Department of Education and Training (DET) | | | | | | | | | | | | | | | | | | | | |
| Glenn Eckardt | Department of Education and Training (DET) | | | | | | | | | | | | | | | | | | | | |
| Carolyn Clancy | Australian Education Union (AEU) | | | | | | | | | | | | | | | | | | | | |
| Leanne Compton | Victorian Curriculum and Assessment Authority (VCAA) | | | | | | | | | | | | | | | | | | | | |
| George Adda | CMM – Engineering Industries | | | | | | | | | | | | | | | | | | | | |
| Trevor Lange | CMM – Engineering Industries | | | | | | | | | | | | | | | | | | | | |
| <p>3.2 Review for re-accreditation</p> | <p>In 2015 a Course-Reference Group of key stakeholders was formed by the Victorian Department of Education and Training (DET) during the accreditation period of the current course (2231VIC). The Course Reference Group's task was to consider the currency of the course competencies, feedback from RTO teaching staff and responses from course satisfaction surveys.</p> <p>As a result of this work changes were made to the three course units in particular, the woodwork machinery unit (VU21280) and the metalwork machinery unit (VU21281). These units now place greater emphasis on practical skills and risk management. The revised units were retitled and a piloted delivery was undertaken by Holmesglen</p> | | | | | | | | | | | | | | | | | | | | |

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| | <p>Institute and Harvester Technical College. Feedback from the pilot indicated more time was needed for delivery and assessment due to added emphasis on the practical skills component. The Reference Group recommended an increase in the nominal delivery hours for both machine based units.</p> <p>This course will replace course 22231VIC of the same title and it is deemed to be not equivalent. There are to be no new enrolments in the superseded course once this course is accredited. RTOs with the current course on their Scope of Registration will be notified by the proponent once the new course has been formally recognised. All new enrolments must be in the new course once it is accredited by the VRQA.</p> <p>The expiry date for the course 2231VIC is 31 December 2017.</p> <p>The transition arrangements between the current course and the new course are provided below.</p> |
|--|---|

3.3 Transition Arrangement

| 22231VIC Course in Safe Use of Machinery for Technology Teaching | | 22454VIC Course in Safe Use of Machinery for Technology Teaching | | Comments |
|---|--|---|---|---|
| Unit Code | Unit Title | Unit Code | Unit Title | |
| VU21279 | Investigate the OH&S responsibilities of technology teachers | VU22276 | Apply safe work practices involving machines used in technology teaching | Equivalent |
| VU21280 | Safely operate and maintain wood working machines | VU22278 | Perform safe work operations involving wood working machines used in technology teaching | Not equivalent Now contains additional Elements & Performance Criteria |
| VU21281 | Safely operate and maintain metal work machines | VU22277 | Perform safe work operations involving metal working machines used in technology teaching | Not equivalent Now contains additional Elements & Performance Criteria |

| 4 Course outcomes | | Standards 1, 2, 3 and 4 AQTF Standards for Accredited Courses | | |
|---|--|--|---------------|---------------|
| 4.1 Qualification level | Standards 1, 2 and 3 AQTF Standards for Accredited Courses This course does not align with any specific Australian Qualification Framework (AQF) level; however it is a program of learning that comprises units of competency that meet an identified need and has been accredited by an accrediting authority in the past. The course does not have the breath, depth or volume of learning of a qualification. | | | |
| 4.2 Employability skills | Standard 4 AQTF Standards for Accredited Courses Not applicable | | | |
| 4.3 Recognition given to the course (if applicable) | Standard 5 AQTF Standards for Accredited Courses Not applicable | | | |
| 4.4 Licensing/ regulatory requirements (if applicable) | Standard 5 AQTF Standards for Accredited Courses Not applicable | | | |
| 5 Course rules | | Standards 2, 6, 7 and 9 AQTF Standards for Accredited Courses | | |
| 5.1 Course structure To be eligible for a Statement of Attainment for the <i>Course in Safe Use of Machinery in Technology Teaching</i> , participants must complete: <ul style="list-style-type: none"> - Generic unit <i>plus</i> - Minimum of one (1) Technical unit Note: <ul style="list-style-type: none"> - Selecting Technical unit VU22277 will result in the award of: <i>Course in Machinery for Technology Teaching (Metalwork)</i> - Selecting elective unit VU22278 will result in the award of: <i>Course in Machinery for Technology Teaching (Woodwork)</i> - Selecting elective units VU22277 and VU22278 will result in the award of a dual-specialisation: <i>Course in Machinery for Technology Teaching (Metalwork and Woodwork)</i> Participants who do not complete the minimum number of required units will be issued with a Statement of Attainment identifying the unit of competency successfully completed. | | | | |
| Unit of competency code | Field of Education code | Unit of competency title | Pre-requisite | Nominal hours |
| Generic unit | | | | |
| VU22276 | 070105 | Apply safe work practices involving machines used in technology teaching | Nil | 4 |

| Technical units | | | | |
|--------------------------------|--------|--|---------|----------------|
| VU22277 | 070105 | Perform safe work operations involving metal working machines used in technology teaching | VU22276 | 18 |
| VU22278 | 070105 | Perform safe work operations involving wood working machines used in technology teaching | VU22276 | 18 |
| Total nominal hours = | | | | 22 - 40 |
| 5.2 Entry requirements | | <p><i>Standard 9 AQTF Standards for Accredited Courses</i></p> <p>Course participants must be technology teachers registered with the Victorian Institute of Teaching or trainee technology teachers enrolled in an approved secondary teaching qualification with technology listed as a method.</p> | | |
| 6 Assessment | | Standards 10 and 12 AQTF Standards for Accredited Courses | | |
| 6.1 Assessment strategy | | <p><i>Standard 10 AQTF Standards for Accredited Courses</i></p> <p>All assessments, including Recognition of Prior Learning (RPL) must be consistent with:</p> <ul style="list-style-type: none"> Standard 1.2/1.5 of the Australian Quality Training Framework (AQTF): <i>Essential Conditions and Standards for Initial/Continuing Registration</i>, or Standard 1, Clauses 1.1 and 1.8 of the <i>Standards for Registered Training Organisation (SRTOs) 2015</i>, or The relevant Standards for Registered Training Organisations in effect at the time of assessment. <p>Assessment strategies must therefore ensure that:</p> <ul style="list-style-type: none"> all assessments are valid, reliable, flexible and fair learners are informed of the context and purpose of the assessment and the assessment process feedback is provided to learners about the outcomes of the assessment process and guidance given for future options time allowance to complete a task is reasonable and specified to reflect the context in which the task takes place <p>Assessment strategies should be designed to:</p> <ul style="list-style-type: none"> cover a range of skills and knowledge required to demonstrate achievement of the course aims collect evidence on a number of occasions to suit a variety of contexts and situations be appropriate to the knowledge, skills, methods of delivery and needs and characteristics of learners assist assessors to interpret evidence consistently recognise prior learning be equitable to all learners | | |

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| | <p>Assessment methods are included in each unit and may include:</p> <ul style="list-style-type: none"> • direct observation of processes and procedures • oral and/or written questioning • inspection of final process outcomes • documented work based evidence • completion of practical wood and/or metalwork projects <p>A holistic approach to assessment, by combining the assessment of more than one unit, is encouraged to better replicate working practice and reduce the potential for over assessment.</p> |
| <p>6.2 Assessor competencies</p> | <p><i>Standard 12 AQTF Standards for Accredited Courses</i></p> <p>Assessment must be undertaken by a person with competencies compliant with:</p> <ul style="list-style-type: none"> • Standard 1.4 of the AQTF: <i>Essential Conditions and Standards for Initial/Continuing Registration, or</i> • Standard 1, Clauses 1.13, 1.14, 1.15, 1.16 and 1.17 of the Standards for Registered Training Organisation 2015 (SRTOs), or • The relevant Standards for Registered Training Organisations in effect at the time of assessment. <p>In addition to the above, assessors must have current knowledge of the job or role in a secondary school setting against which performance is being assessed.</p> |
| <p>7 Delivery Standards 11 and 12 AQTF Standards for Accredited Courses</p> | |
| <p>7.1 Delivery modes</p> | <p><i>Standard 12 AQTF Standards for Accredited Courses</i></p> <p>There are no restrictions on offering the program on either a full-time or part-time basis and may include online support.</p> <p>Where possible it is preferable program delivery is undertaken in a secondary school environment.</p> <p>Delivery strategies may include:</p> <ul style="list-style-type: none"> • classroom instruction • practical demonstrations of machine set up, operation and close down • practical project work using portable and stationary woodwork and/or metalwork machinery <p>Program delivery should allow for self-directed learning and development together with independent judgement and accountability for outputs.</p> <p>Some areas of content may be common to more than one element, performance criteria and therefore some integration of delivery may be appropriate.</p> <p>In addition to the above, it is recommended that trainers' have current knowledge of the job or role in a secondary school setting against which performance is being assessed.</p> |

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| <p>7.2 Resources</p> | <p><i>Standard 12 AQTF Standards for Accredited Courses</i></p> <p>General facilities, equipment and other resources required to deliver the Course in Safe Use of Machinery for Technology Teaching may include:</p> <ul style="list-style-type: none"> • Classroom equipped with whiteboard facilities and overhead data projector • Woodwork and metalwork workshop facilities equipped with appropriate environment and WHS/OHS safeguards, range of hand tools, portable and stationary machinery • Access to relevant texts, online support and references such as equipment and machine operation and service manuals (where available), safety and maintenance bulletins and WHS/OHS policy documents • access to plans, drawings and instructions <p>Training must be undertaken by a person or persons with competencies compliant with:</p> <ul style="list-style-type: none"> • Standard 1.4 of the AQTF: <i>Essential Conditions and Standards for Initial/Continuing Registration</i>, or • Standard 1, Clauses 1.13, 1.14, 1.15, 1.16 and 1.17 of the Standards for Registered Training Organisation 2015 (SRTOs), or • The relevant Standards for Registered Training Organisations in effect at the time of assessment. <p>In addition to the above, assessors must have current knowledge of the job or role in a secondary school setting against which performance is being assessed.</p> |
| <p>8 Pathways and articulation</p> | <p><i>Standard 12 AQTF Standards for Accredited Courses</i></p> <p>There is no formal articulation or credit transfer arrangement into other VET or higher education qualifications from the <i>Course in Safe Use of Machinery for Technology Teaching</i></p> |
| <p>9. Ongoing monitoring and evaluation</p> | <p><i>Standard 13 AQTF Standards for Accredited Courses</i></p> <p>Ongoing evaluation and validation of this course is the responsibility of the Curriculum Maintenance Manager (CMM), Engineering Industries.</p> <p>A formal review of the course will take place at least once during the accreditation period and will be informed by feedback from:</p> <ul style="list-style-type: none"> - course participants past and present - teaching staff - DET and secondary school representatives <p>Recommendations for any significant changes will be reported through the CMM - Engineering Industries to the Victorian Registration and Qualifications Authority (VRQA).</p> |

Section C - Units of Competency

| | |
|---------|---|
| VU22276 | Apply safe work practices involving machines used in technology teaching |
| VU22277 | Perform safe work operations involving metal working machines used in technology teaching |
| VU22278 | Perform safe work operations involving wood working machines used in technology teaching |

Apply safe work practices involving machines used in technology teaching

Unit Descriptor

This unit describes the knowledge and skills required by secondary school technology teachers using wood and/or metal working machinery in a classroom environment in order to:

- source Work, Health and Safety/ Occupational, Health and Safety (WHS/OHS) legislation and Victorian Department of Education and Training (DET)/school policies and relevant information for technology teaching
- apply WHS/OHS to group based learning
- assess and control risks
- identify hazards
- respond to emergencies
- identify WHS/OHS roles of key school personnel.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Employability Skills

Not applicable

Application of the Unit

This unit applies to registered secondary technology teachers using wood working and/or metal working machinery in a teaching environment.

ELEMENT

Elements describe the essential outcomes of a unit of competency.

- 1 Source legislation, policies and resources relevant to wood and/or metal working technology teaching in secondary schools

PERFORMANCE CRITERIA

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

- 1.1 **Key requirements of WHS/OHS legislation**, DET/school policies and guidelines applying to technology teaching are identified and reviewed.
- 1.2 Departmental and school **WHS/OHS resources** are accessed and implementation requirements are described.
- 1.3 **WHS/OHS risk control hierarchy** as it applies to risks in technology teaching is described.
- 1.4 The responsibility of school management for WHS/OHS and opportunities for technology teachers to contribute to **WHS/OHS consultation processes** and DET/school policies and guidelines are identified and explained.
- 1.5 **Machinery** approved by the education sector employer for use in technology teaching is identified.

- 2 Assess and manage risks in a wood and/or metal working technology teaching environment
- 2.1 Range of **hazard identification tools** are used to identify hazards in a technology teaching environment.
- 2.2 Risk controls for identified **hazards** in wood and/or metal working technology teaching are developed and applied
- 2.3 Requirements for reporting potentially hazardous situations and incidents to appropriate personnel are identified and followed
- 2.4 **Contingency plans** for emergency incidents within a teaching environment are developed and followed
- 2.5 **Classroom strategies** for implementing teachers' responsibilities for WHS/OHS relevant to wood and/or metal technology teaching are described and followed.

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills:

- applying WHS/OHS legislative requirements and DET/school policies in a technology teaching environment
- identifying and controlling risks and hazards to provide a safe learning environment
- exercising duty of care in a technology teaching environment
- reporting on WHS/OHS hazards and incidents
- communicating and working with others to reduce risks and improve safety in a technology teaching environment

Required knowledge:

- WHS/OHS requirements in legislation
- DET/school policies and guidelines relevant to technology teaching
- WHS/OHS roles and responsibilities of technology teachers
- WHS/OHS roles and responsibilities of school management
- sources of WHS/OHS information and advice
- hazards and risks in a technology teaching environment
- risk controls relevant to technology teaching
- workplace and equipment safety requirements
- types of wood and/or metal working machines and their purpose

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Key requirements of WHS/OHS legislation

includes but not limited to:

- duty of care/due diligence
- hazard and risk identification and reporting
- risk assessment and control measures
- incident/accident investigation and reporting
- OH&S audits and safety inspections
- consultative arrangements for employees
- health and safety representatives
- safe operating procedures/instructions
- use and maintenance of personal protective equipment
- assessment of appropriate hair, clothing and footwear
- emergency and evacuation procedures
- equipment maintenance and use material safety data sheets
- hazardous substances and dangerous goods, code of practice and safe operation procedures
- mandatory reporting
- first aid requirements

WHS/OHS resources

includes but are not limited to:

- DET website: i.e. www.education.vic.gov.au
- WorkSafe publications: i.e. www.worksafe.vic.gov.au
- SafeWork Australia publications: i.e. www.safeworkaustralia.gov.au
- material safety data sheets (MSDS)

WHS/OHS risk control hierarchy

includes but not limited to:

- substitution solution by using lower risk machinery and processes
- engineering solution such as:
 - using purpose designed storage
 - automation
 - guarding and barriers to isolate the risk from students
- administrative solutions such as:
 - purchasing pre-cut wood
 - implementing safe work procedures for using machinery and transporting materials
 - induction training of employees and students
- use of personal protective equipment

WHS/OHS consultation processes

includes but not limited to:

- identifying technology risks,
- reviewing risk control options
- developing and implementing action plans applicable to technology areas

Machinery may include but not limited to:

- *wood working machines*
 - wood lathe
 - cross cut saw
 - rip saw
 - panel saw
 - scroll saw
 - band saw
 - docking saw
 - bobbin sander
 - disc sander
 - belt sander
 - vertical drill press
 - planer/jointer
 - panel planer
 - router
 - thicknesser planer
- *metal working machines*
 - metalworking lathe
 - drill press
 - pedestal or bench grinder
 - milling machine
 - cold metal saw
 - power hack saw
 - metal cut off saw
 - buffing machine
 - angle grinder
 - guillotine
 - folding machine
 - welding equipment

Hazard identification tools include but not limited to:

- workplace inspection
- consultation
- incident reporting and analysis
- incident investigations

Hazards includes but not limited to:

- machinery
- manual handling
- noise
- chemicals
- slips and trips
- electrical hazards
- dust and fumes
- people-environment fit/ergonomics

- Contingency plans** includes but not limited to:
- plans devised to address unexpected outcomes
 - plans used to address risks that may arise
 - component of risk management plans

- Classroom Strategies** include but not limited to:
- supervision
 - housekeeping
 - safety culture

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- To be considered competent in this unit the candidate must achieve all of the elements of competency to the level defined by the associated performance criteria using the required skills and knowledge.
- Specifically, the candidate must be able to:
 - implement WHS/OHS workplace procedures and practices relevant to technology teaching
 - identify and control risks associated with the operation of woodwork and/or metalwork machines in a technology teaching environment.

Context of and specific resources for assessment

- Assessment should be conducted in a real or simulated technology teaching environment involving woodwork and/or metalwork machinery.
- Where assessment is conducted in a simulated environment the range of conditions should reflect a realistic technology teaching situation.
- The teacher should have access to relevant WHS/OHS reference materials such as WHS/OHS legislation, DET/school policies and procedures and other related resources.

Method of assessment

- Assessment must involve the demonstration of practical WHS/OHS knowledge and skills and may also include:
 - verbal and/or written tests
 - 3rd Party reports
 - inspection of the final product or outcome
 - documented work based evidence.

VU22277

Perform-safe work operations involving metal working machines used in technology teaching

Unit Descriptor

This unit describes the knowledge and skills required to apply safe work practices to operations using a range of metal working machines used for technology teaching in secondary schools. It includes the application of the relevant Work, Health and Safety/Occupational, Health and Safety (WHS/OHS) and Victorian Department of Education and Training (DET)/school policies and guideline requirements for the work.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Employability Skills

Not applicable

Prerequisite unit

VU22276 – Apply safe work practices involving machinery used in technology teaching

Application of the Unit

This unit applies to registered secondary technology teachers using metal working machinery in a teaching environment.

ELEMENT

Elements describe the essential outcomes of a unit of competency.

PERFORMANCE CRITERIA

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

1. Plan and prepare for technology project

- 1.1 **Key requirements of WHS/OHS legislation**, DET/school policies and guidelines applying to technology teachers are accessed and followed
- 1.2 **Project** requirements are determined from documentation, project briefs or discussions with **appropriate personnel**
- 1.3 Project is planned and the outcomes clearly specified and approved by appropriate personnel
- 1.4 **Machinery** suitable for the project for use in technology teaching is identified.
- 1.5 Established **WHS/OHS requirements** of the school and relevant **risk control measures** and procedures are followed in the preparation of the project work area
- 1.6 Appropriate **personal protective equipment** is selected, correctly fitted and used in accordance with relevant Australian Standards
- 1.7 Materials and equipment needed for the project are obtained in accordance with school procedures and checked for correct operation and safety
- 1.8 The relevant machinery is set up in accordance with required operating processes, ensuring all required guarding is securely in position in accordance with manufacturer's/workplace procedures.

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| 2. Manage risks associated with the project | <p>2.1 Teacher responsibilities for WHS/OHS requirements and risk management relevant to technology teaching are clarified and applied</p> <p>2.2 DET's OHS Management System website is utilised to assist in the identification of hazards in the project work area</p> <p>2.3 Risk controls are developed for hazards identified for the technology project</p> <p>2.4 Reporting requirements for potentially hazardous situations and incidents relating to the technology project are identified and followed</p> <p>2.5 Contingency plans are developed for implementing appropriate procedures in the case of emergency incidents within the classroom</p> |
| 3. Conduct technology project | <p>3.1 Machine start up procedures are carried out to relevant WHS/OHS requirements and the manufacturer's specifications</p> <p>3.2 Materials are set up in accordance with manufacturer's/workplace procedures.</p> <p>3.3 Project activities are undertaken to reflect current knowledge, methods and techniques</p> <p>3.4 Project progress is regularly reviewed against the project plan and discussed with appropriate personnel</p> <p>3.5 Decisions for managing unexpected situations are made from discussions with appropriate personnel, project specifications and school procedures</p> <p>3.6 Methods for managing unexpected situations are selected on the basis of safety, specified project outcomes and DET/school procedures</p> <p>3.7 Machine shut down procedure is carried out to manufacturer's specifications and industry standards, and isolation procedures are implemented as appropriate</p> <p>3.8 Faults are identified and reported to appropriate personnel according to school procedures</p> |
| 4. Evaluate the project outcomes | <p>4.1 Machine and work area are cleaned and inspected for serviceable condition, according to school procedures</p> <p>4.2 Material that can be reused is collected and stored in accordance with school procedures</p> <p>4.3 Waste material and scrap are removed from the work area and disposed of in an environmentally sustainable manner</p> <p>4.4 Project outcomes are evaluated against the project specifications and relevant safety system requirements</p> |

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills:

- identifying and controlling risks and hazards to ensure a safe learning environment
- exercising duty of care/due diligence in a technology teaching environment
- reporting on WHS/OHS hazards and incidents
- working with others to reduce risks and improve safety in a technology teaching environment
- selecting and using appropriate personal protective equipment (PPE)
- operating metal working machines safely
- setting up metal working machines
- measuring materials and components to specified sizes/tolerances
- identifying and reporting machine faults
- communicating effectively with others in an educational setting
- producing materials to a required specification using metal working machines
- applying safe operating procedures when using metal working machines
- identifying and using a range of metal cutting tools and associated accessories
- identifying and using tools and equipment relevant to setting up metal working machines
- handling materials under machine operation
- identifying machine and equipment faults

Required knowledge:

- WHS/OHS requirements in legislation.
- DET/school policies and guidelines relevant to technology teaching
- WHS/OHS roles and responsibilities of technology teachers
- WHS/OHS roles and responsibilities of school management
- sources of WHS/OHS information and advice
- hazards and risks in a technology teaching environment
- risk controls relevant to technology teaching
- workplace and equipment safety requirements
- maintenance processes of metal working machines
- types of metal working machines and their operation
- personal protective equipment (PPE)

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording in the Performance Criteria is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

Key requirements of WHS/OHS legislation

includes but not limited to:

- duty of care/due diligence
- hazard and risk identification and reporting
- risk assessment and control measures
- incident/accident investigation and reporting
- WHS/OHS audits and safety inspections
- consultative arrangements for employees
- health and safety representatives

Projects includes but not limited to:

- physical objects constructed by participants such as:
 - storage box
 - tool box
 - kitchen tools

Appropriate personnel includes but not limited to:

- Principal
- Deputy Principal/Supervisor
- leading teacher
- team member/other technology teachers
- WHS/OHS representative
- WHS/OHS consultant
- technician
- trainer
- mentor
- WHS/OHS management committee representative

Machinery may include but not limited to:

- metal working machines
 - metalworking lathe
 - drill press
 - pedestal or bench grinder
 - milling machine
 - cold metal saw
 - power hack saw
 - metal cut off saw
 - buffing machine
 - angle grinder
 - guillotine
 - folding machine
 - welding equipment

WHS/OHS requirements includes but not limited to:

- Department of Education and Training (DET) OHS Management System
- standards and codes of practice relevant to specific machinery
- supervision requirements for specific machinery
- hazard identification and risk assessment for specific machinery
- risk assessment and control measures
- safe operating procedures/instructions
- manufacturer's safe operating procedures and specifications
- use and maintenance of personal protective equipment
- equipment maintenance and use

Risk control measures includes but not limited to:

- eliminating the risk (e.g. eliminating high risk activities from the curriculum)
- reducing the risk through:
 - substitution (e.g. using lower risk machinery)
 - engineering (e.g. using storage design, automation, guarding and barriers to isolate the risk from students)
 - Administrative solutions, for example:
 - implementing safe work procedures (SWP) for using machinery and transporting materials
 - induction training of employees and students
 - use of personal protective equipment (PPE)

Personal protective equipment includes but not limited to:

- safe footwear
- eye/face protection
- ear plugs/muffs
- dust masks/respirators
- gloves
- cap
- hairnet
- appropriate clothing

Risk management includes but not limited to:

- identification, assessment, and prioritisation of risks
- minimising, monitoring, and controlling the probability and/or impact of incidents

Hazards includes but not limited to:

- machinery
- manual handling
- noise
- chemicals
- slips and trips
- electrical hazards
- dust and fumes
- people-environment fit/ergonomics

Contingency plans includes but not limited to:

- plans devised to address unexpected outcomes
- plans used to address risks that may arise
- component of risk management plans

Set up includes but not limited to:

- pre-operation checks
- settings for the job
- selecting appropriate cutting speeds and feeds
- ensuring guards are in place
- housekeeping

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- To be considered competent in this unit the candidate must achieve all of the elements of competency to the level defined by the associated performance criteria using the required skills and knowledge.
- Specifically the candidate must be able to:
 - implement WHS/OHS workplace procedures and practices relevant to technology teaching
 - identify and control risks associated with the operation of metal working machines
 - operate a range of metal working machines safely
 - produce materials to required specifications using metal working machines
 - complete and evaluate a metal working project.

Context of and specific resources for assessment

- Assessment should be conducted in a real or simulated workplace environment involving a metal working project
- Where assessment is conducted in a simulated environment the range of conditions should reflect a realistic technology teaching situation
- Resources required for assessment include access to:
 - a project brief and any associated documentation
 - relevant metal working machines and associated tools, equipment and materials
 - relevant manufacturer's specifications, codes of practice, standards, manuals and reference material.

Method of assessment

- Assessment must involve the demonstration of practical skills in a metal working project and may also include:
 - verbal/written tests on required knowledge
 - 3rd party reports
 - inspection of the final product against specifications
 - documented workplace evidence.

VU22278

Perform safe work operations involving wood working machines used in technology teaching

Unit Descriptor

This unit describes the knowledge and skills required to apply safe work practices to operations using a range of wood working machines used for technology teaching in secondary schools. It includes the application of the relevant Work, Health and Safety/Occupational, Health and Safety (WHS/OHS) and Victorian Department of Education and Training (DET)/school policies and guideline requirements for the work.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Employability Skills

Not applicable

Prerequisite unit

VU22276 – Apply safe work practices involving machinery used in technology teaching

Application of the Unit

This unit applies to registered secondary technology teachers using wood working machinery in a teaching environment.

ELEMENT

Elements describe the essential outcomes of a unit of competency.

PERFORMANCE CRITERIA

Performance criteria describe the required performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge and/or the range statement. Assessment of performance is to be consistent with the evidence guide.

1. Plan and prepare for technology project

- 1.1 **Key requirements of WHS/OHS legislation**, DET/school policies and guidelines applying to technology teachers are accessed via the Internet and followed
- 1.2 **Project** requirements are determined from documentation, project briefs or discussions with **appropriate personnel**
- 1.3 Project is planned and the outcomes clearly specified and approved by appropriate personnel
- 1.4 **Machinery** suitable for the project for use in technology teaching is identified.
- 1.5 Established **WHS/OHS requirements** of the school and relevant **risk control measures** and procedures are followed in the preparation of the project work area
- 1.6 Appropriate **personal protective equipment** is selected, correctly fitted and used in accordance with relevant Australian Standards
- 1.7 Materials and equipment needed for the project are obtained in accordance with school procedures and checked for correct operation and safety
- 1.8 Relevant machine is set up to required operating process and setting with fences/guides locked in position, in accordance with work place procedures

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| 2 | Manage risks associated with the project | <p>2.1 Teacher responsibilities for WHS/OHS requirements and risk management relevant to technology teaching are clarified and applied</p> <p>2.2 DET's OHS Management System website is utilised to assist in the identification of hazards in the project work area</p> <p>2.3 Risk controls are developed for hazards identified for the technology project</p> <p>2.4 Reporting requirements for potentially hazardous situations and incidents relating to the technology project are identified and followed</p> <p>2.5 Contingency plans are developed for implementing appropriate procedures in the case of emergency incidents within the classroom</p> |
| 3 | Conduct technology project | <p>3.1 Machine start up procedures are carried out to relevant WHS/OHS requirements and the manufacturer's/workplace specifications</p> <p>3.2 Materials feed to the machine, where applicable, is in accordance with manufacturer's specifications, safe handling and workplace procedures</p> <p>3.3 Materials are set up in accordance with manufacturer's/workplace specifications</p> <p>3.4 Project activities are undertaken to reflect current knowledge, methods and techniques</p> <p>3.5 Project progress is regularly reviewed against the project plan and discussed with appropriate personnel</p> <p>3.6 Decisions for managing unexpected situations are made from discussions with appropriate personnel, project specifications and school procedures</p> <p>3.7 Methods for managing unexpected situations are selected on the basis of safety, specified project outcomes and DET/school procedures</p> <p>3.8 Machine shut down procedure is carried out to manufacturer's specifications and industry standards, and isolation procedures are implemented as appropriate</p> <p>3.9 Faults are identified and reported to appropriate personnel according to school procedures</p> |

- 4 Evaluate the project outcomes
- 4.1 Machine and work area are cleaned and inspected for serviceable condition, according to the school procedures
 - 4.2 Material that can be reused is collected and stored in accordance with school procedures
 - 4.3 Waste material and scrap are removed from the work area and disposed of in an environmentally sustainable manner
 - 4.4 Project outcomes are evaluated against the project specifications and relevant safety system requirements

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills:

- applying WHS/OHS legislative requirements and DET/school policies in a technology teaching environment
- identifying any controlling risks and hazards to ensure a safe learning environment
- exercising duty of care/due diligence in a technology teaching environment
- reporting on WHS/OHS hazards and incidents
- working with others to reduce risks and improve safety in a technology teaching environment
- selecting and using appropriate personal protective equipment (PPE)
- operating wood working machines safely
- setting up wood working machines
- measuring materials and components to specified sizes/tolerances
- identifying and reporting machine faults
- communicating effectively with others in an educational setting
- producing materials to a required specification using wood working machines

Required knowledge:

- WHS/OHS requirements in legislation.
- DET/school policies and guidelines relevant to technology teaching
- WHS/OHS roles and responsibilities of technology teachers
- WHS/OHS roles and responsibilities of school management
- sources of WHS/OHS information and advice
- hazards and risks in a technology teaching environment
- risk controls relevant to technology teaching
- workplace and equipment safety requirements
- maintenance processes of wood working machines
- types of wood working machines and their operation
- safety considerations for operating wood working machines
- cutters, blades and associated accessories
- tools and equipment relevant to setting up wood working machines
- materials under machine operation
- fault identification
- personal protective equipment (PPE)
- guarding and machine protective equipment

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

**Key requirements of
WHS/OHS legislation**

includes but not limited to:

- duty of care/due diligence
- hazard and risk identification and reporting
- risk assessment and control measures
- incident/accident investigation and reporting
- WHS/OHS audits and safety inspections
- consultative arrangements for employees
- health and safety representatives

Projects includes but not limited to:

- physical objects constructed by participants such as:
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 - tool box
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Appropriate personnel
includes but not limited to:

- Principal
- Deputy Principal/Supervisor
- leading teacher
- team member/other technology teachers
- technician
- WHS/OHS representative
- WHS/OHS consultant
- trainer
- mentor
- WHS/OHS management committee representative

Machinery may include but not limited to:

- wood working machines
 - wood lathe
 - cross cut saw
 - rip saw
 - panel saw
 - scroll saw
 - band saw
 - docking saw
 - bobbin sander
 - disc sander
 - belt sander
 - vertical drill press
 - planer/jointer
 - panel planer
 - router
 - thicknesser/planer

WHS/OHS requirements includes but not limited to:

- Department of Education and Teaching (DET) OHS Management System
- standards and codes of practice relevant to specific machinery
- supervision requirements for specific machinery
- hazard identification and risk assessment for specific machinery
- risk assessment and control measures
- safe operating procedures/instructions
- manufacturer's safe operating procedures and specifications
- use and maintenance of personal protective equipment
- equipment maintenance and use

Risk control measures includes but not limited to:

- eliminating the risk (e.g. eliminating high risk activities from the curriculum)
- reducing the risk through:
 - substitution (e.g. using lower risk machinery)
 - engineering (e.g. using storage design, automation, guarding and barriers to isolate the risk from students)
 - administrative solutions, for example:
 - purchasing pre-cut wood
 - implementing safe work procedures (SWP) for using machinery and transporting materials
 - induction training of employees and students
 - use of personal protective equipment (PPE)

Personal protective equipment includes but not limited to:

- safe footwear
- eye/face protection
- ear plugs/muffs
- dust masks/respirators
- gloves
- cap
- hairnet
- appropriate clothing

Risk management includes but not limited to:

- the identification, assessment, and prioritisation of risks
- the minimising, monitoring, and controlling the probability and/or impact of incidents

Hazards includes but not limited to:

- machinery
- manual handling
- noise
- chemicals
- slips and trips
- electrical hazards
- dust and fumes
- people-environment fit/ergonomics

Contingency plans includes but not limited to:

- plans devised to address unexpected outcomes
- plans used to address risks that may arise
- component of risk management plans

Set up includes but not limited to:

- pre-operation checks
- settings for the job
- adjustments for sizing and speed
- ensuring fences and guards are in place
- housekeeping

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

- To be considered competent in this unit the candidate must achieve all of the elements of competency to the level defined by the associated performance criteria using the required skills and knowledge.
- Specifically the candidate must be able to:
 - implement relevant WHS/OHS workplace procedures and practices relevant to technology teaching
 - identify and control risks associated with the operation of wood working machines
 - operate a range of wood working machines safely
 - produce materials to required specifications using wood working machines
 - complete and evaluate a wood working project.

Context of and specific resources for assessment

- Assessment should be conducted in a real or simulated workplace environment involving a wood working project
- Where assessment is conducted in a simulated environment the range of conditions should reflect a realistic technology teaching situation.
- Resources required for assessment include access to:
 - a project brief and any associated documentation
 - relevant wood working machines and associated tools, equipment and materials
 - relevant manufacturer's specifications, Codes of Practice, Standards, manuals and reference material.

Method of assessment

- Assessment must involve the demonstration of practical skills in a wood working project and may also include:
 - verbal/written tests on required knowledge
 - 3rd Party reports
 - inspection of the final product against specifications
 - documented workplace evidence.