Stage 6 Syllabus

Automotive Curriculum Framework

based on the AUR12 Automotive Industry Retail, Service and Repair Training Package (version 2)

for implementation from 2014
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1 Introduction to the Automotive Curriculum Framework

Industry curriculum frameworks provide students with the opportunity to gain industry-recognised national vocational qualifications under the Australian Qualifications Framework (AQF) as part of their NSW Higher School Certificate (HSC).

HSC courses within industry curriculum frameworks count as Board Developed unit credit for the HSC. Frameworks include an HSC examination which provides the opportunity for students to have this HSC examination mark contribute to the calculation of their Australian Tertiary Admission Rank (ATAR).

1.1 AQF VET qualifications available in the Automotive Curriculum Framework

The Automotive Curriculum Framework is based on qualifications and units of competency contained in the nationally endorsed AUR12 Automotive Industry Retail, Service and Repair Training Package.

The AQF VET qualifications available in the Automotive Curriculum Framework are:

- AUR20712 Certificate II in Automotive Vocational Preparation
- AUR20512 Certificate II in Automotive Servicing Technology
- AUR30312 Certificate III in Automotive Electrical Technology (Statement of Attainment only)
- AUR30612 Certificate III in Light Vehicle Mechanical Technology (Statement of Attainment only).

1.2 Industry context – automotive

The automotive industry is a sizeable entity and key contributor to Australia’s economy. The industry is highly diverse and encompasses a wide range of activities including motor vehicle and motor vehicle parts manufacturing/wholesaling; automotive retailing, servicing and repair; supply of aftermarket equipment; outdoor power equipment and recreational boating.

The automotive repair and maintenance sector currently employs the majority of workers in the industry and covers businesses and employees involved in the repair and servicing of passenger and commercial vehicles, motorcycles and automotive electrical systems. Occupations within this sector include light vehicle mechanic, panel beater, spray painter and automotive electrician.

The rapidly evolving motor vehicle technologies require a highly trained workforce and investment in capital equipment, especially as consumer demand for sophisticated cleaner and greener vehicles continues to grow. In order to meet future demand, workers will need up-to-date industry knowledge and strong customer service skills, as well as the mathematics, information technology and science skills to conduct vehicle diagnostics and work with emerging technologies.1

1.3  HSC VET course and AQF VET qualification completion requirements

The requirements for the completion of an HSC VET course are different to the requirements for AQF VET qualification completion. Registered Training Organisations (RTOs) need to ensure that delivery of courses meets HSC course requirements and complies with Training Package rules.

1.3.1  HSC VET course requirements

HSC VET courses in the Automotive Curriculum Framework are made up of:
- units of competency
  - associated HSC mandatory units of competency
  - associated HSC stream units of competency
  - HSC elective units of competency
- HSC outcomes and content
- mandatory HSC work placement requirements.

For a student to be considered to have satisfactorily completed a course within the Automotive Curriculum Framework they must meet the:
- HSC VET course requirements (refer to Sections 2.2–2.5 of this Syllabus)
- requirements for satisfactory course completion (refer to the Board of Studies, Teaching and Educational Standards NSW (BOSTES) Assessment Certification Examination (ACE) website).
  There must be sufficient evidence that the student has:
  - followed the course developed by the Board
  - applied themselves with diligence and sustained effort to the set tasks and experiences provided in the course
  - achieved some or all of the course outcomes
  - undertaken the mandatory work placement.

1.3.2  AQF VET qualification requirements

To receive AQF VET qualifications, students must meet the assessment requirements of the AUR12 Automotive Industry Retail, Service and Repair Training Package (http://training.gov.au).

AQF VET qualifications are determined by the qualification rules for each Training Package, referred to as qualification packaging rules. The qualification packaging rules describe the number and range of core and elective units of competency required for eligibility for an AQF VET qualification.

Units of competency should be selected to meet qualification packaging rules for the intended qualification pathway. Selection of units of competency should also be guided by the job outcome sought and local industry requirements.

Qualification packaging rules for each AQF VET qualification available through the Automotive Curriculum Framework are contained in the AUR12 Automotive Industry Retail, Service and Repair Training Package. Associated documents have been developed to describe how qualifications can be achieved through the Framework. These are available on the BOSTES website at www.boardofstudies.nsw.edu.au/syllabus_hsc/automotive.html.
1.4 **HSC VET course delivery**

HSC VET courses can only be delivered by an RTO with the relevant qualification and units of competency on their scope of registration. Scope of registration can be checked at [http://training.gov.au](http://training.gov.au).

RTOs offering training programs for the delivery and assessment of the Automotive HSC VET courses must meet the requirements of the VET Quality Framework, the *AUR12 Automotive Industry Retail, Service and Repair Training Package* and the HSC course.

Information about the delivery of HSC VET courses by RTOs other than school system RTOs or TAFE NSW institutes is contained on the BOSTES *Assessment Certification Examination (ACE) website*.


1.5 **Outcomes and content**

The HSC outcomes and content for this industry curriculum framework are defined in:

- the units of competency (refer to Section 2.5 of this Syllabus)
- HSC Content focus areas (refer to Section 3 of this Syllabus).

1.6 **Assessment requirements and advice**

HSC VET courses are competency-based. The BOSTES and the VET Quality Framework require that a competency-based approach to assessment is used. Advice on appropriate assessment practice in relation to the Automotive Curriculum Framework is contained in the *Assessment and Reporting in Automotive Stage 6* document.

An integrated or holistic approach to course delivery and assessment should be adopted.
2 Course structures and requirements

2.1 Automotive HSC VET courses

This Framework specifies the range of industry-developed units of competency from the 
AUR12 Automotive Industry Retail, Service and Repair Training Package for inclusion in the 
HSC. It describes how these units of competency are arranged in HSC VET courses to gain 
unit credit for the HSC.

The Automotive Curriculum Framework contains the following courses:

- Automotive (120 indicative hours) – see Section 2.2 of this Syllabus
- Automotive (240 indicative hours) – see Section 2.3 of this Syllabus
- Automotive Specialisation Study (60 or 120 indicative hours) 
  – see Section 2.4 of this Syllabus.

2.1.1 Unit credit for the Higher School Certificate

To facilitate flexibility of VET in the HSC, courses within the Automotive Curriculum 
Framework may be delivered as Preliminary, as HSC or as a combination of Preliminary 
and HSC units.

The HSC credit units will be allocated to students’ Preliminary and/or HSC patterns of study 
as required.

The pattern of study (BOSTES course number) entered on Schools Online (Administration) 
should reflect the delivery of the HSC VET course over successive years. For example, 
delivery of the 240 HSC indicative hour course over two years should be entered as 
2 units x 2 years. Students will be credentialled for the HSC credit units entered each calendar 
year, provided they have satisfactorily completed the course requirements for that calendar 
year as determined by the school, college or RTO.

Table 1 HSC credit units for Automotive HSC courses

<table>
<thead>
<tr>
<th>HSC VET course</th>
<th>HSC credit units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive (120 indicative hours)</td>
<td>2</td>
</tr>
<tr>
<td>Automotive (240 indicative hours)</td>
<td>4</td>
</tr>
<tr>
<td>Automotive Specialisation Study (60 indicative hours)</td>
<td>1</td>
</tr>
<tr>
<td>Automotive Specialisation Study (120 indicative hours)</td>
<td>2</td>
</tr>
</tbody>
</table>
### 2.1.2 BOSTES course numbers

<table>
<thead>
<tr>
<th>BOSTES course name</th>
<th>Pattern of study</th>
<th>BOSTES course number</th>
<th>Schools Online (Administration) entry advice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive (120 hours)</td>
<td>2 units x 1 year</td>
<td>26000</td>
<td>Enter this course number for either Preliminary (Year 11) or HSC (Year 12)</td>
</tr>
<tr>
<td>Automotive (240 hours)</td>
<td>2 units x 2 years</td>
<td>26001</td>
<td>Enter this course number for both Preliminary (Year 11) and HSC (Year 12)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 units x 1 year</td>
<td>26002</td>
<td>Enter this course number for either Preliminary (Year 11) or HSC (Year 12)</td>
</tr>
<tr>
<td>Automotive Specialisation Study (60 hours)</td>
<td>1 unit x 1 year</td>
<td>26013</td>
<td>Enter this course number for either Preliminary (Year 11) or HSC (Year 12)</td>
</tr>
<tr>
<td>Automotive Specialisation Study (120 hours)</td>
<td>2 units x 1 year</td>
<td>26014</td>
<td>Enter this course number for either Preliminary (Year 11) or HSC (Year 12)</td>
</tr>
</tbody>
</table>

### 2.1.3 HSC examination numbers

<table>
<thead>
<tr>
<th>HSC examination</th>
<th>HSC stream</th>
<th>HSC examination number</th>
<th>Schools Online (Administration) entry advice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive</td>
<td>Mechanical Technology</td>
<td>26089</td>
<td>Enter this course number as an HSC (Year 12) entry in the year the examination is undertaken</td>
</tr>
<tr>
<td></td>
<td>or</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vehicle Body</td>
<td>26087</td>
<td>Enter this course number as an HSC (Year 12) entry in the year the examination is undertaken</td>
</tr>
</tbody>
</table>
2.1.4 Allocation of HSC indicative hours of credit

Units of competency drawn from Training Packages are not defined in terms of duration. The amount of time required by individual students to achieve competency will vary according to their aptitude and experience. Where a training program is designed for delivery by an RTO, the RTO will specify the length of the training program according to the delivery strategies and/or curriculum resources chosen.

However, for the purposes of the HSC, VET courses must be described in terms of their indicative hours. For this reason, indicative hours for unit credit towards the HSC have been assigned to each unit of competency within the Framework. It is emphasised that the assignment of indicative hours does not imply that all students will fulfil all requirements of a unit of competency within these hours. RTOs may determine that additional or fewer hours are required for the achievement of particular competencies. However, this does not alter the HSC indicative hours allocated, only the delivery hours.

Students may need to spend additional time practising skills in a work environment and completing projects and assignments, in order to fulfil Training Package assessment requirements.

The HSC indicative hours assigned to each unit of competency are listed in Section 2.5 of this Syllabus.

2.1.5 Work placement requirements

Work placement is a mandatory HSC requirement within this Framework and appropriate hours have been assigned to each HSC VET course.

Work placement is to be undertaken in an authentic automotive work environment appropriate to the qualification being undertaken.

Students undertaking courses as part of a school-based apprenticeship or traineeship will meet the mandatory work placement hour requirements through the on-the-job training component of the apprenticeship or traineeship.

For units of competency that must be assessed in an automotive work environment, work placement provides an opportunity to collect evidence required for a student to be deemed competent.

Recognition of Prior Learning (RPL) may be granted for mandatory work placement requirements. Students’ outside employment (ie not under the auspices of the school) may be recognised towards the requirement for work placement in a VET course (ACE 8051 – Assessment Certification Examination (ACE) website).

Non-completion of work placement is grounds for withholding the HSC course. Schools and colleges are advised to follow the procedure for issuing “N” determinations as outlined on the BOSTES Assessment Certification Examination (ACE) website.
Students must complete the following work placement for Automotive Curriculum Framework courses.

**Table 2  Minimum work placement hours for Automotive HSC courses**

<table>
<thead>
<tr>
<th>Automotive Framework course</th>
<th>Minimum work placement requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive (120 indicative hours)</td>
<td>35 hours</td>
</tr>
<tr>
<td>Automotive (240 indicative hours)</td>
<td>70 hours</td>
</tr>
<tr>
<td>Automotive Specialisation Study (60 indicative hours)</td>
<td>met through the on-the-job training component of the school-based apprenticeship/traineeship</td>
</tr>
<tr>
<td>Automotive Specialisation Study (120 indicative hours)</td>
<td></td>
</tr>
</tbody>
</table>

Refer to the [Work Placement in Automotive](#) document for further information.
2.2 Automotive (120 indicative hours)

AQF VET qualifications

The Automotive (120 indicative hours) course provides a pathway to the following qualification:

- Statement of Attainment towards AUR20712 Certificate II in Automotive Vocational Preparation.

Course structure

This course consists of a selection of units of competency from the HSC mandatory, streams and/or elective pool to a minimum of 120 HSC indicative hours.
(See Section 2.5, Tables 3–6 of this Syllabus.)

Course requirements – Automotive (120 indicative hours)

Students must attempt:

- a selection of units of competency from the HSC mandatory, streams and/or elective pool to a minimum of 120 HSC indicative hours
  (Section 2.5, Tables 3–6)

- a minimum of 35 hours of work placement
  (Section 2.1.5)
2.3 Automotive (240 indicative hours)

AQF VET qualifications

The Automotive (240 indicative hours) course provides a pathway to the following qualifications:
- **AUR20712 Certificate II in Automotive Vocational Preparation**
- **Statement of Attainment towards:**
  - **AUR20512 Certificate II in Automotive Servicing Technology**
    – school-based trainees only
  - **AUR30312 Certificate III in Automotive Electrical Technology**
    – school-based apprentices only
  - **AUR30612 Certificate III in Light Vehicle Mechanical Technology**
    – school-based apprentices only.

Course structure

This course consists of:
- four mandatory focus areas (containing seven associated units of competency – students undertake four units)
- two stream focus areas:
  - Mechanical Technology (containing five associated units of competency – students undertake four units)
  - Vehicle Body (containing four associated units of competency)
- a range of elective units of competency which can be selected from the stream not already undertaken and/or the HSC elective pool
- HSC Content – for the mandatory and stream focus areas.

(See Section 2.5, Tables 3–6 and Section 3 of this Syllabus.)

For students undertaking a school-based apprenticeship or traineeship, additional elective units of competency are available. These are listed in Section 2.5, Table 7 and/or Table 8 of this Syllabus.

**Automotive HSC examination**

An external written Higher School Certificate examination will be conducted for the 240 indicative hour course (refer to Section 4 of this Syllabus).

The HSC Content (focus areas) for the HSC examination is detailed in Section 3 of this Syllabus.
Course requirements – Automotive (240 indicative hours) – students attempt ONE of the following:

**Mechanical Technology**

HSC stream

- **FOUR associated mandatory** units of competency
  (Section 2.5, Table 3)
  *with the following focus areas*
  - Safety
  - Sustainability
  - Troubleshooting and problem-solving
  - Working in the automotive industry and workplace
  (Section 3)

- **FOUR associated stream** units of competency
  (Section 2.5, Table 4)
  *with the Mechanical Technology focus area*
  (Section 3)

- HSC elective units of competency from the stream not already undertaken and/or the HSC elective pool(s) to bring course total to **240 HSC indicative hours**
  (Section 2.5, Tables 5 & 6, also Table 7 for SBA&Ts and Table 8 for SBAs only)

- a minimum of **70 hours of work placement**
  (Section 2.1.5)

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**Vehicle Body**

HSC stream

- **FOUR associated mandatory** units of competency
  (Section 2.5, Table 3)
  *with the following focus areas*
  - Safety
  - Sustainability
  - Troubleshooting and problem-solving
  - Working in the automotive industry and workplace
  (Section 3)

- **FOUR associated stream** units of competency
  (Section 2.5, Table 5)
  *with the Vehicle Body focus area*
  (Section 3)

- HSC elective units of competency from the stream not already undertaken and/or the HSC elective pool(s) to bring course total to **240 HSC indicative hours**
  (Section 2.5, Tables 4 & 6, also Table 7 for SBA&Ts and Table 8 for SBAs only)

- a minimum of **70 hours of work placement**
  (Section 2.1.5)
2.4 Automotive Specialisation Study (60 or 120 indicative hours)

Course eligibility

The Automotive Specialisation Study course is available only to students who are currently entered in, or have completed, the Automotive (240 indicative hours) course with:

- an approved school-based traineeship training contract in Certificate II in Automotive Servicing Technology
  or
- an approved school-based apprenticeship training contract in Certificate III in Automotive Electrical Technology or Light Vehicle Mechanical Technology.

The Automotive Specialisation Study:

- provides school-based trainees (SBTs) with the opportunity to complete their Certificate II in Automotive Servicing Technology qualification
  or
- provides school-based apprentices (SBAs) with the opportunity to gain further credit towards their Certificate III Automotive Electrical Technology or Light Vehicle Mechanical Technology qualification.

AQF VET qualifications

The Automotive Specialisation Study (60 or 120 indicative hours) course provides a pathway to the following qualifications:

- [AUR20512 Certificate II in Automotive Servicing Technology](#) – school-based trainees only
- [AUR30312 Certificate III in Automotive Electrical Technology](#) – school-based apprentices only
- [AUR30612 Certificate III in Light Vehicle Mechanical Technology](#) – school-based apprentices only.

Course structure

The Automotive Specialisation Study consists of units of competency (not previously undertaken) drawn from the HSC stream and/or HSC elective pool and/or additional pool of HSC electives.

(See Section 2.5, Tables 4–8 of this Syllabus.)

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2 Note, for Automotive Electrical Technology or Light Vehicle Mechanical Technology school-based apprentices, a Specialisation Study course would be required only if Stage 1/Year 1 of the apprenticeship could not be completed within the 240-hour Automotive course.
Course requirements – Automotive Specialisation Study  
(60 or 120 indicative hours)

Students must attempt:

- **a minimum of 60 or 120 HSC indicative hours** of units of competency not previously undertaken from the **HSC stream and/or elective pools**  
  (Section 2.5, Tables 4–8)

- **work placement** requirement met through the on-the-job training component of the SBA/T (Section 2.1.5)
## 2.5 Automotive units of competency


### Table 3  Associated mandatory units of competency for the 240-hour course

Attempt the following units of competency:

<table>
<thead>
<tr>
<th>Unit code and title</th>
<th>HSC indicative hours of credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Safety</strong></td>
<td></td>
</tr>
<tr>
<td>AURASA2002</td>
<td>Apply safe working practices in an automotive workplace</td>
</tr>
<tr>
<td><strong>Sustainability</strong></td>
<td></td>
</tr>
<tr>
<td>AURAEA2002</td>
<td>Apply environmental and sustainability best practice in an automotive workplace</td>
</tr>
<tr>
<td>or</td>
<td>AURAEA3003</td>
</tr>
<tr>
<td><strong>Troubleshooting and problem-solving</strong></td>
<td></td>
</tr>
<tr>
<td>AURAF2004</td>
<td>Solve routine problems in an automotive workplace</td>
</tr>
<tr>
<td>or</td>
<td>AURATA2001</td>
</tr>
<tr>
<td><strong>Working in the automotive industry and workplace</strong></td>
<td></td>
</tr>
<tr>
<td>AURAFA2003</td>
<td>Communicate effectively in an automotive workplace</td>
</tr>
<tr>
<td>or</td>
<td>AURAMA2001</td>
</tr>
</tbody>
</table>

**Total HSC indicative hours for mandatory:** 65 – 75
For the 240-hour course, attempt all units of competency from ONE of the following two streams:

### Table 4  Associated units of competency – Mechanical Technology stream

<table>
<thead>
<tr>
<th>Unit code and title</th>
<th>HSC indicative hours of credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>AURETR1003  Apply automotive electrical system fundamentals</td>
<td>20</td>
</tr>
<tr>
<td>or</td>
<td></td>
</tr>
<tr>
<td>AURETR2007  Demonstrate knowledge of automotive electrical circuits and wiring systems</td>
<td>20</td>
</tr>
<tr>
<td>AURLTA1001  Apply automotive mechanical system fundamentals</td>
<td>15</td>
</tr>
<tr>
<td>AURTTE2004  Inspect and service engines</td>
<td>25</td>
</tr>
<tr>
<td>AURTTK2002  Use and maintain workplace tools and equipment</td>
<td>25</td>
</tr>
</tbody>
</table>

Total HSC indicative hours for Mechanical Technology: 85

OR

### Table 5  Associated units of competency – Vehicle Body stream

<table>
<thead>
<tr>
<th>Unit code and title</th>
<th>HSC indicative hours of credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>AURETR1003  Apply automotive electrical system fundamentals</td>
<td>20</td>
</tr>
<tr>
<td>AURTTK2002  Use and maintain workplace tools and equipment</td>
<td>25</td>
</tr>
<tr>
<td>AURVTN2003  Carry out pre-repair vehicle body operations</td>
<td>20</td>
</tr>
<tr>
<td>AURVTP2006  Prepare vehicle components for paint repairs</td>
<td>20</td>
</tr>
</tbody>
</table>

Total HSC indicative hours for Vehicle Body: 85
<table>
<thead>
<tr>
<th>Unit code and title</th>
<th>HSC indicative hours of credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Common – Foundation Skills</strong></td>
<td></td>
</tr>
<tr>
<td>AURAF2001 Use numbers in an automotive workplace</td>
<td>5</td>
</tr>
<tr>
<td>AURAF2002 Read in an automotive workplace</td>
<td>5</td>
</tr>
<tr>
<td>AURAF2005 Write routine texts in an automotive workplace</td>
<td>5</td>
</tr>
<tr>
<td><strong>Common – Quality</strong></td>
<td></td>
</tr>
<tr>
<td>AURQA2001 Contribute to quality work outcomes</td>
<td>15</td>
</tr>
<tr>
<td><strong>Electrical – Technical – Tools and Equipment</strong></td>
<td></td>
</tr>
<tr>
<td>AURETK1001 Identify, select and use low voltage electrical test equipment</td>
<td>10</td>
</tr>
<tr>
<td><strong>Electrical – Technical – Electrical and Electronic</strong></td>
<td></td>
</tr>
<tr>
<td>AURETR1001 Remove and tag automotive electrical system components</td>
<td>15</td>
</tr>
<tr>
<td>AURETR2006 Carry out soldering of electrical wiring and circuits</td>
<td>15</td>
</tr>
<tr>
<td>AURETR2009 Install, test and repair vehicle lighting and wiring systems</td>
<td>30</td>
</tr>
<tr>
<td>AURETR2012 Test and repair basic electrical circuits</td>
<td>25</td>
</tr>
<tr>
<td>AURETR2015 Inspect and service batteries</td>
<td>5</td>
</tr>
<tr>
<td><strong>Mechanical – Heavy Vehicle – Technical – Fuel Systems</strong></td>
<td></td>
</tr>
<tr>
<td>AURHTF2001 Inspect heavy commercial vehicle fuel systems and components</td>
<td>10</td>
</tr>
<tr>
<td><strong>Mechanical – Heavy Vehicle – Technical – Wheels and Tyres</strong></td>
<td></td>
</tr>
<tr>
<td>AURHTJ1001 Inspect heavy commercial vehicle wheels and tyres</td>
<td>10</td>
</tr>
<tr>
<td><strong>Mechanical – Heavy Vehicle – Technical – Driveline and Final Drives</strong></td>
<td></td>
</tr>
<tr>
<td>AURHTQ2001 Inspect heavy commercial vehicle driveline components</td>
<td>5</td>
</tr>
<tr>
<td><strong>Mechanical – Motorcycle – Technical</strong></td>
<td></td>
</tr>
<tr>
<td>AURJTA1001 Perform minor adjustments to motorcycles</td>
<td>5</td>
</tr>
<tr>
<td>AURJTA1002 Remove and replace motorcycle components and accessories</td>
<td>10</td>
</tr>
<tr>
<td><strong>Mechanical – Motorcycle – Technical – Steering and Suspension</strong></td>
<td></td>
</tr>
<tr>
<td>AURJTD2001 Inspect and service motorcycle suspension systems</td>
<td>10</td>
</tr>
<tr>
<td>AURJTD2002 Inspect and service motorcycle steering systems</td>
<td>10</td>
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</table>
Table 6 cont/d

<table>
<thead>
<tr>
<th>Unit code and title</th>
<th>HSC indicative hours of credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mechanical – Motorcycle – Technical – Wheels and Tyres</strong></td>
<td></td>
</tr>
<tr>
<td>AURJTTJ2001 Remove, inspect and fit motorcycle wheel assemblies</td>
<td>15</td>
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<tr>
<td><strong>Mechanical – Light Vehicle – Technical – Wheels and Tyres</strong></td>
<td></td>
</tr>
<tr>
<td>AURLTJ2003 Remove, inspect, and refit light vehicle wheel assemblies</td>
<td>15</td>
</tr>
<tr>
<td><strong>Outdoor Power Equipment – Technical</strong></td>
<td></td>
</tr>
<tr>
<td>AURPTA1001 Carry out pre-repair operations to outdoor power equipment</td>
<td>5</td>
</tr>
<tr>
<td>AURPTA1002 Perform minor adjustments to outdoor power equipment</td>
<td>5</td>
</tr>
<tr>
<td><strong>Outdoor Power Equipment – Technical – Engines</strong></td>
<td></td>
</tr>
<tr>
<td>AURPTE2002 Service engines and engine components (outdoor power equipment)</td>
<td>20</td>
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<tr>
<td><strong>Marine – Technical - Engines</strong></td>
<td></td>
</tr>
<tr>
<td>AURRTE1001 Prepare outboard engines for wet-run testing</td>
<td>5</td>
</tr>
<tr>
<td>AURRTE2002 Service outboard engines and components</td>
<td>10</td>
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<tr>
<td><strong>Mechanical Miscellaneous – Technical</strong></td>
<td></td>
</tr>
<tr>
<td>AURTTA1001 Remove and tag steering, suspension and brake system components</td>
<td>15</td>
</tr>
<tr>
<td>AURTTA1002 Carry out workshop practice activities</td>
<td>15</td>
</tr>
<tr>
<td>AURTTA1003 Use and maintain basic measuring devices</td>
<td>10</td>
</tr>
<tr>
<td>AURTTA2004 Carry out servicing operations</td>
<td>15</td>
</tr>
<tr>
<td>AURTTA2005 Select and use bearings, seals, gaskets, sealants and adhesives</td>
<td>15</td>
</tr>
<tr>
<td>AURTTA2009 Carry out pre-repair operations (mechanical)</td>
<td>15</td>
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<tr>
<td><strong>Mechanical Miscellaneous – Technical – Cooling Systems</strong></td>
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</tr>
<tr>
<td>AURTTC2001 Inspect and service cooling systems</td>
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<tr>
<td><strong>Mechanical Miscellaneous – Technical – Engines</strong></td>
<td></td>
</tr>
<tr>
<td>AURTEE1003 Remove and tag engine system components</td>
<td>15</td>
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<tr>
<td><strong>Mechanical Miscellaneous – Technical – Wheels and Tyres</strong></td>
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</tr>
<tr>
<td>AURTTJ2001 Balance wheels and tyres</td>
<td>10</td>
</tr>
<tr>
<td>Unit code and title</td>
<td>HSC indicative hours of credit</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td><strong>Mechanical Miscellaneous – Technical – Tools and Equipment</strong></td>
<td></td>
</tr>
<tr>
<td>AURTTK2001 Use and maintain measuring equipment in an automotive workplace</td>
<td>15</td>
</tr>
<tr>
<td><strong>Mechanical Miscellaneous – Technical – Driveline and Final Drives</strong></td>
<td></td>
</tr>
<tr>
<td>AURTTQ2001 Service final drive assemblies</td>
<td>10</td>
</tr>
<tr>
<td>AURTTQ2003 Service final drive (driveline)</td>
<td>10</td>
</tr>
<tr>
<td><strong>Vehicle Body – Technical – Tools and Equipment</strong></td>
<td></td>
</tr>
<tr>
<td>AURVT2001 Use and maintain vehicle body repair hand tools</td>
<td>10</td>
</tr>
<tr>
<td><strong>Vehicle Body – Technical – Body</strong></td>
<td></td>
</tr>
<tr>
<td>AURVTK2001 Use and maintain vehicle body repair hand tools</td>
<td>10</td>
</tr>
<tr>
<td>AURVTK2002 Carry out panel repairs</td>
<td>25</td>
</tr>
<tr>
<td>AURVTK2005 Remove and fit protector mouldings, transfers and decals</td>
<td>10</td>
</tr>
<tr>
<td>AURVTK2008 Clean vehicle body and door cavities</td>
<td>5</td>
</tr>
<tr>
<td>AURVTK2009 Clean vehicle engine and engine compartment</td>
<td>5</td>
</tr>
<tr>
<td>AURVTK2010 Clean vehicle underbody</td>
<td>5</td>
</tr>
<tr>
<td><strong>Vehicle Body – Technical – Paint</strong></td>
<td></td>
</tr>
<tr>
<td>AURVTP2002 Carry out masking procedures</td>
<td>20</td>
</tr>
<tr>
<td>AURVTP2003 Prepare spray painting materials and equipment</td>
<td>30</td>
</tr>
<tr>
<td>AURVTP2005 Apply rust prevention and sound deadening materials</td>
<td>15</td>
</tr>
<tr>
<td>AURVTP2007 Apply paint touch-up techniques</td>
<td>20</td>
</tr>
<tr>
<td>AURVTP2008 Clean and polish vehicle exterior paint</td>
<td>5</td>
</tr>
<tr>
<td>AURVTP2026 Carry out basic airbrush application techniques</td>
<td>20</td>
</tr>
<tr>
<td>AURVTP3013 Prepare substrate for refinishing</td>
<td>35</td>
</tr>
<tr>
<td><strong>Vehicle Body – Technical – Trimming and Upholstery</strong></td>
<td></td>
</tr>
<tr>
<td>AURVT2008 Clean and finish vehicle interior trim and seats</td>
<td>10</td>
</tr>
<tr>
<td><strong>Vehicle Body – Technical – Welding, Grinding, Machining and Soldering</strong></td>
<td></td>
</tr>
<tr>
<td>AURVTW2005 Carry out spot welding procedures</td>
<td>20</td>
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</tbody>
</table>
### Table 7  Additional HSC elective pool for school-based apprentices and trainees

<table>
<thead>
<tr>
<th>Unit code and title</th>
<th>HSC indicative hours of credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical – Technical – Tools and Equipment</strong></td>
<td></td>
</tr>
<tr>
<td>AU RETK2002  Use and maintain automotive electrical test equipment</td>
<td>15</td>
</tr>
<tr>
<td><strong>Electrical – Technical – Electrical and Electronic</strong></td>
<td></td>
</tr>
<tr>
<td>AU RETR2008  Remove and replace electrical units and assemblies</td>
<td>25</td>
</tr>
<tr>
<td>AU RETR2013  Inspect and service charging systems</td>
<td>15</td>
</tr>
<tr>
<td>AU RETR2014  Inspect and service starting systems</td>
<td>15</td>
</tr>
<tr>
<td>AU RETR2042  Remove, refit and test electrical componentry for operation following body repair activities</td>
<td>20</td>
</tr>
<tr>
<td>AU RETR3025  Test, charge and replace batteries</td>
<td>10</td>
</tr>
<tr>
<td><strong>Mechanical – Light Vehicle – Technical – Wheels and Tyres</strong></td>
<td></td>
</tr>
<tr>
<td>AU RL TJ2002  Remove, inspect, repair and fit tyres and tubes (light)</td>
<td>15</td>
</tr>
<tr>
<td><strong>Mechanical Miscellaneous – Technical – Brakes</strong></td>
<td></td>
</tr>
<tr>
<td>AU RTTB2001  Inspect and service braking systems</td>
<td>20</td>
</tr>
<tr>
<td><strong>Mechanical Miscellaneous – Technical – Steering and Suspension</strong></td>
<td></td>
</tr>
<tr>
<td>AU RTTD2002  Inspect and service steering systems</td>
<td>15</td>
</tr>
<tr>
<td>AU RTTD2004  Inspect and service suspension systems</td>
<td>15</td>
</tr>
<tr>
<td><strong>Mechanical Miscellaneous – Technical Fuel Systems</strong></td>
<td></td>
</tr>
<tr>
<td>AU RT TF2001  Service petrol fuel systems</td>
<td>15</td>
</tr>
<tr>
<td>AU RT TF2002  Service diesel fuel injection systems</td>
<td>20</td>
</tr>
<tr>
<td><strong>Mechanical Miscellaneous – Technical – Transmission</strong></td>
<td></td>
</tr>
<tr>
<td>AU RT TX2002  Inspect and service transmissions (manual)</td>
<td>15</td>
</tr>
<tr>
<td>AU RT TX2003  Inspect and service transmissions (automatic)</td>
<td>15</td>
</tr>
<tr>
<td>AU RT TX2005  Inspect and service clutch systems</td>
<td>15</td>
</tr>
<tr>
<td><strong>Vehicle Body – Technical – Body</strong></td>
<td></td>
</tr>
<tr>
<td>AU RV TN2004  Remove, replace and realign bolt-on panels, sections and fittings</td>
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<tr>
<td><strong>Vehicle Body – Technical – Welding, Grinding, Machining and Soldering</strong></td>
<td></td>
</tr>
<tr>
<td>AU RV TW2003  Carry out gas metal arc welding procedures</td>
<td>20</td>
</tr>
<tr>
<td>AU RV TW2008  Carry out oxy acetylene welding, thermal cutting and thermal heating procedures</td>
<td>20</td>
</tr>
</tbody>
</table>
Table 8  Additional HSC elective pool for school-based apprentices

<table>
<thead>
<tr>
<th>Unit code and title</th>
<th>HSC indicative hours of credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical – Technical – Electrical and Electronic</strong></td>
<td></td>
</tr>
<tr>
<td>AURETR2010</td>
<td>Fabricate, test and repair wiring harnesses and looms 25</td>
</tr>
<tr>
<td>AURETR2011</td>
<td>Install and test basic ancillary electrical components 30</td>
</tr>
<tr>
<td>AURETR3028</td>
<td>Diagnose and repair instruments and warning systems 25</td>
</tr>
<tr>
<td>AURETR3030</td>
<td>Diagnose and repair starting systems 20</td>
</tr>
<tr>
<td>AURETR3031</td>
<td>Diagnose and repair ignition systems 20</td>
</tr>
<tr>
<td>AURETR3032</td>
<td>Repair electrical systems 25</td>
</tr>
<tr>
<td><strong>Mechanical – Light Vehicle – Technical – Brakes</strong></td>
<td></td>
</tr>
<tr>
<td>AURLTB3003</td>
<td>Diagnose and repair light vehicle hydraulic braking systems 25</td>
</tr>
<tr>
<td><strong>Mechanical – Light Vehicle – Technical – Steering and Suspension</strong></td>
<td></td>
</tr>
<tr>
<td>AURLTD3004</td>
<td>Repair steering systems (light vehicle) 25</td>
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<tr>
<td>AURLTD3005</td>
<td>Repair suspension systems (light vehicle) 25</td>
</tr>
<tr>
<td>AURLTD3006</td>
<td>Carry out wheel alignment operations (light vehicle) 20</td>
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<tr>
<td><strong>Mechanical – Light Vehicle – Technical – Engines</strong></td>
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<tr>
<td>AURLTE3002</td>
<td>Repair engines and associated engine components (light vehicle) 40</td>
</tr>
<tr>
<td><strong>Mechanical – Light Vehicle – Technical – Driveline and Final Drives</strong></td>
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</tr>
<tr>
<td>AURLTQ3001</td>
<td>Repair final drive assemblies (light vehicle) 20</td>
</tr>
<tr>
<td>AURLTQ3002</td>
<td>Repair final drive – driveline (light vehicle) 20</td>
</tr>
<tr>
<td><strong>Mechanical – Light Vehicle – Technical – Transmission</strong></td>
<td></td>
</tr>
<tr>
<td>AURLTX3001</td>
<td>Repair transmissions – manual (light vehicle) 25</td>
</tr>
<tr>
<td>AURLTX3002</td>
<td>Repair transmissions – automatic (light vehicle) 25</td>
</tr>
<tr>
<td>AURLTX3003</td>
<td>Diagnose and repair light vehicle clutch systems 20</td>
</tr>
<tr>
<td><strong>Mechanical Miscellaneous – Technical – Brakes</strong></td>
<td></td>
</tr>
<tr>
<td>AURTTB2003</td>
<td>Machine brake drums and brake disc rotors 15</td>
</tr>
<tr>
<td><strong>Mechanical Miscellaneous – Technical – Cooling Systems</strong></td>
<td></td>
</tr>
<tr>
<td>AURTTC3003</td>
<td>Diagnose and repair cooling systems 20</td>
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<tr>
<td><strong>Mechanical Miscellaneous – Technical – Driveline and Final Drives</strong></td>
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<tr>
<td>AURTTQ2002</td>
<td>Remove and refit driveline components 10</td>
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<tr>
<td><strong>Mechanical Miscellaneous – Technical – Welding, Grinding, Machining and Soldering</strong></td>
<td></td>
</tr>
<tr>
<td>AURTTW2001</td>
<td>Carry out soft soldering techniques 15</td>
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</tbody>
</table>
3 HSC Content

The HSC Content for this industry curriculum framework is organised into focus areas. Each focus area prescribes the scope of learning for the HSC. This is drawn from the associated units of competency.

Students undertaking the 240 indicative hour course from the Automotive Curriculum Framework must address all of the mandatory focus areas plus one stream focus area.

The Automotive Curriculum Framework mandatory focus areas are:
- Safety
- Sustainability
- Troubleshooting and problem-solving
- Working in the automotive industry and workplace.

The Automotive Curriculum Framework stream focus areas are:
- Mechanical Technology
- Vehicle Body.

The HSC examination in Automotive is based on the HSC Content and employability skills for Certificate II in Automotive Vocational Preparation (refer to Section 4 of this Syllabus).

Details of the employability skills for the AQF VET qualification pathways in this Framework are contained in the AUR12 Automotive Industry Retail, Service and Repair Training Package. They are also available in the Employability Skills in Automotive document.

The following table outlines the associated units of competency for each focus area.
### Table 9  Focus areas and associated units of competency

#### Mandatory

<table>
<thead>
<tr>
<th>Focus area</th>
<th>Unit code</th>
<th>Unit title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety</td>
<td>AURASA2002</td>
<td>Apply safe working practices in an automotive workplace</td>
</tr>
<tr>
<td>Sustainability</td>
<td>AURAEA2002</td>
<td>Apply environmental and sustainability best practice in an automotive workplace</td>
</tr>
<tr>
<td>or AURAEA3003</td>
<td></td>
<td>Monitor environmental and sustainability best practice in the automotive mechanical industry</td>
</tr>
<tr>
<td>Troubleshooting and problem-solving</td>
<td>AURAFA2004</td>
<td>Solve routine problems in an automotive workplace</td>
</tr>
<tr>
<td>or AURATA2001</td>
<td></td>
<td>Identify basic automotive faults using troubleshooting processes</td>
</tr>
<tr>
<td>Working in the automotive industry and workplace</td>
<td>AURAFA2003</td>
<td>Communicate effectively in an automotive workplace</td>
</tr>
<tr>
<td>or AURAMA2001</td>
<td></td>
<td>Work effectively with others</td>
</tr>
</tbody>
</table>

#### Stream

<table>
<thead>
<tr>
<th>Focus area</th>
<th>Unit code</th>
<th>Unit title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Technology</td>
<td>AURETR1003 or AURETR2007 and AURLTA1001</td>
<td>Apply automotive electrical system fundamentals Demonstrate knowledge of automotive electrical circuits and wiring systems Apply automotive mechanical system fundamentals Inspect and service engines Use and maintain workplace tools and equipment</td>
</tr>
<tr>
<td>Vehicle Body</td>
<td>AURETR1003 AURTTE2004 and AURTTK2002 AURVTP2006</td>
<td>Apply automotive electrical system fundamentals Use and maintain workplace tools and equipment Carry out pre-repair vehicle body operations Prepare vehicle components for paint repairs</td>
</tr>
</tbody>
</table>
3.1 Safety – mandatory focus area

3.1.1 Outcomes

The student:
- demonstrates an understanding of work health and safety (WHS) compliance, participation and consultation in the automotive industry
- explains workplace policy, procedures and practices that ensure the safety of the automotive worker and their colleagues and customers
- applies risk management in an automotive workplace
- proposes appropriate responses to emergency situations.

3.1.2 Associated unit of competency

The scope of learning for the HSC must be read and delivered in conjunction with the following associated unit of competency:
- AURASA2002 Apply safe working practices in an automotive workplace

The unit descriptor, elements and critical aspects for assessment for the unit of competency are provided below.

AURASA2002 Apply safe working practices in an automotive workplace

Descriptor
This unit describes the performance outcomes to apply basic safety and emergency procedures in order to contribute to a safe workplace for staff, customers and others. The unit involves the safety factors related to the use of automotive workplace hand tools and hand-held power tools, fixed equipment, chemicals, as well as vehicles and their use. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Elements
1. Apply basic safety procedures
2. Apply emergency procedures.

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

The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy all of the requirements of the performance criteria and required skills and knowledge.

A person who demonstrates competency in this unit must be able to:
- communicate effectively with others involved in or affected by the work
- identify and assess hazardous situations and rectify, or report to the relevant persons
- safely handle and store dangerous and hazardous goods and substances
- apply safe manual handling practices
- identify fire safety equipment and procedures applicable to emergency situations in an automotive workplace
- follow workplace safety, accident, incident and evacuation procedures.
3.1.3 Employability skills

The following employability skills have been considered in the development of the scope of learning for the HSC:
- communication
- teamwork
- problem-solving
- planning and organising
- learning.
### 3.1.4 Scope of learning for the HSC

**Work health and safety (WHS)**

- meaning of health and safety
- implications of the cost of workplace injury:
  - human
  - social
  - economic
  - organisational
- acknowledge that WHS is everyone’s responsibility in the workplace and the implications of this responsibility
- concept of ‘participation’ and ‘consultation’ in relation to WHS
- primary role/function of key bodies involved in WHS:
  - WorkCover NSW
  - Safe Work Australia
  - local councils
  - unions
  - professional associations
- identify internal and external sources of workplace WHS information
- importance of acting within the level of authority/scope of responsibility in relation to WHS in the workplace:
  - taking initiative
  - problem-solving
  - decision-making

**WHS compliance**

- difference between an act, regulation, code of practice and industry/workplace standard
- purpose and intent of WHS legislation and codes of practice and their application to the automotive industry/workplace and a specific job role:
  - WHS legislation:
    - Work Health and Safety Act 2011 (NSW) (as amended)
    - Work Health and Safety Regulation 2011 (NSW) (as amended)
  - codes of practice related to:
    - dangerous goods and substances
    - manual handling
    - risk management
    - WHS consultation
- WHS rights, duties and responsibilities of the person conducting a business or undertaking (PCBU), officer and worker
### WHS compliance cont/d

- Consequences of failure to observe WHS workplace policy and procedures and legislative requirements
- Safety signs, symbols and barricades used in the automotive industry and their use in the workplace:
  - Legislative requirements
  - Meaning of colour and shape
  - Placement and positioning
- Automotive industry and workplace requirements for monitoring and reporting in relation to workplace safety
- Describe how, when and to whom to report:
  - Types:
    - Formal and informal
    - Written
    - Verbal
  - Reporting to appropriate persons
- Purpose and importance of monitoring and reporting
- Apply workplace policy and protocols and regulatory requirements when recording and reporting in relation to WHS

### WHS consultation and participation

- Opportunities for workers to provide input into WHS consultation and participation processes:
  - WHS audit
  - Formal and informal discussion
  - WHS inspection
  - Meeting
  - Training
- Requirements (including election/formation) of a health and safety committee or health and safety representative (HSR) and their role and responsibilities in the workplace
- Role and responsibilities of relevant personnel in WHS consultation and participation:
  - PCBU
  - Manager/supervisor/team leader
  - Self
  - Other workers
  - Union
- Importance of identifying and reporting:
  - WHS issues and concerns
  - workplace hazards
  - Unsafe work practices
  - Breaches of health and safety
  and examples of each for the automotive industry and workplace
### risk management

- difference between a hazard and a risk

- risk management and its application in the automotive workplace:
  - hazard identification:
    - potential hazards to self, colleagues, customers and others typical to the industry
    - range of hazards:
      - human factors (self and others)
      - manual handling
      - hazardous and non-hazardous materials
      - tools, equipment and machinery
      - work environment
      - work processes and practices
  - risk assessment
  - risk control (hierarchy):
    - eliminate the risk
    - minimise the risk:
      - substitution
      - modification
      - isolation
      - engineering control
    - other controls:
      - administrative
      - safe work practices
      - personal protective equipment (PPE)
  - monitor and review

### safe work practices and procedures

- safe work procedures and practices and their purposes:
  - WHS induction training
  - adherence to work instructions, workplace policy and safe work procedures (SWPs)
  - selection, use and maintenance of PPE
  - manual handling techniques:
    - when working individually, in pairs and with a team:
      - moving, lifting, carrying and placing items down
      - working with tools, machinery and equipment
      - bending and twisting
      - mechanical aids/lifting equipment
    - legal weight limits
  - dangerous goods and hazardous substances:
    - correct handling, application, labelling, storage and disposal
    - management of spills
    - safety data sheet (SDS)
  - tools, equipment and machinery:
    - appropriate selection, correct use, regular maintenance and correct storage
    - pre-operational checks
    - electrical tagging
    - lockout and tagging
### safe work practices and procedures cont'd

- when working on and around vehicles
  - lifting devices:
    - use and operation
    - safe and secure placements
    - safe working load (SWL)
  - housekeeping:
    - clean-up procedures
    - waste disposal
    - consideration of WHS and the environment

- importance of safe work procedures and practices
- propose safe work procedures and practices for a workplace and individual job role within the automotive industry

### incidents, accidents and emergencies

- difference between an incident, accident and emergency
- a range of incidents, accidents and emergencies common to the automotive industry
- distinguish between a manageable first aid situation and an emergency situation
- range of potential injuries common to the automotive workplace, their cause(s) and basic first aid for these injuries
- strategies to reduce workplace accidents, injury and impairment
- procedures for responding to incidents, accidents and emergencies:
  - emergency situations
  - seeking assistance
  - emergency contact numbers
  - emergency signals, alarms and exits:
    - location
    - use
  - procedures to follow:
    - notification
    - workplace policy and procedures:
      - evacuation
      - security
    - reporting
  - basic process of fighting a fire
  - use of firefighting equipment:
    - fire blanket
    - fire extinguishers
    - fire hose and reel
  - role of personnel in an emergency
  - first aid:
    - basic principles
    - personnel responsible
<table>
<thead>
<tr>
<th>incidents, accidents and emergencies cont/d</th>
</tr>
</thead>
<tbody>
<tr>
<td>• apply workplace policy and protocols and regulatory requirements when recording and reporting in relation to incidents, accidents and emergencies</td>
</tr>
</tbody>
</table>
3.2 Sustainability – mandatory focus area

3.2.1 Outcomes

The student:
- explains the fundamental principles of sustainability
- evaluates the workplace in relation to environmentally sustainable work practices
- proposes improvements for sustainability in an automotive workplace
- understands environmental hazard identification and risk control.

3.2.2 Associated units of competency

The scope of learning for the HSC must be read and delivered in conjunction with the following associated unit of competency:

either
- AURAEA2002  Apply environmental and sustainability best practice in an automotive workplace

or
- AURAEA3003  Monitor environmental and sustainability best practice in the automotive mechanical industry

The unit descriptor, elements and critical aspects for assessment for each of these units of competency are provided below.

AURAEA2002  Apply environmental and sustainability best practice in an automotive workplace

Descriptor  This unit describes the performance outcomes required to identify and apply environmental regulations and sustainability best practice to work safely and avoid potential environmental hazards in an automotive workplace. Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Elements

1. Identify and apply environmental regulations
2. Identify and avoid contamination to water systems and land
3. Identify and avoid hazards to air quality
4. Identify and avoid noise hazards
5. Identify and apply sustainability best practice.

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

The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy all of the requirements of the performance criteria and required skills and knowledge.

A person who demonstrates competency in this unit must be able to:
- apply environmental regulations and sustainability best practice in an automotive workplace
- identify materials used in an automotive workplace and assess their potential environmental impact
- use a spill kit
- report environmental damage and breaches of environmental regulations.
AURAEA3003 Monitor environmental and sustainability best practice in the automotive mechanical industry

Descriptor This unit describes the performance outcomes required to apply and monitor environmental regulations and sustainability best practice whilst undertaking mechanical service or repair of light or heavy vehicles, motorcycles, outdoor power equipment or their components in the automotive mechanical industry. Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Elements 1. Apply and monitor environment regulations
2. Monitor and avoid contamination to water systems and land
3. Monitor and avoid hazards to air quality
4. Monitor and avoid noise hazards
5. Monitor and apply sustainability best practice.

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

The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy all of the requirements of the performance criteria and required skills and knowledge.

A person who demonstrates competency in this unit must be able to:
- monitor and apply environmental regulations and sustainability best practice as they apply in an automotive mechanical workplace
- identify materials used in an automotive mechanical workplace and assess their potential environmental impact
- monitor and record environmental damage and breaches to environmental regulations.

3.2.3 Employability skills

The following employability skills have been considered in the development of the scope of learning for the HSC:
- communication
- problem-solving
- initiative and enterprise
- planning and organising.
3.2.4 Scope of learning for the HSC

**environmental issues and sustainability**

- current environmental issues affecting the automotive industry:
  - energy use and efficiency
  - pollution
  - recycling/re-use
  - resource use and efficiency
  - sustainability
  - waste management
- environmental hazards and contaminants common to the automotive industry and workplace
- potential environmental impact of products, equipment and machinery used in the automotive workplace and associated contaminants and hazards
- potential impact of the automotive industry workplace practices on the environment, including water systems and land, air quality and noise levels
- effects of pollution and ways it can be minimised
- concept of:
  - sustainability
  - ethical environmental practice
  - environmentally sustainable work practice
  - environmentally sustainable workplace
- consequences of neglecting environmentally sustainable work practices for the workplace and the environment

**compliance**

- environmental legislation:
  - purpose and intent:
    - *Protection of the Environment Operations Act 1997* (NSW) (as amended)
    - *Clean Energy Act 2011* (Cth) (as amended)
    - *Contaminated Land Management Act 1997* (NSW) (as amended)
  - implications for work being undertaken in an automotive workplace
  - application to the automotive industry, the workplace and a specific job role
- definition of:
  - ‘compliance’
  - ‘best practice’
- levels of compliance in relation to environmental requirements:
  - workplace
  - industry
  - government (local, State/Territory and Commonwealth)
- consequences of failure to comply with environmental requirements
- workplace policy and procedures for environmental compliance
### Compliance cont/d

- individual worker and workplace responsibilities in relation to the environment
- industry and workplace requirements for monitoring and reporting in relation to the environment
- describing how, when and to whom to report:
  - types:
    - formal/informal
    - written
    - verbal
  - reporting to appropriate persons
- primary role/function of regulators and key bodies involved in environmental protection, including:
  - NSW Environment Protection Authority (EPA)
  - NSW Department of Environment and Climate Change
  - Clean Energy Regulator (Cth)
  - Department of Climate Change and Efficiency (Cth)
  - local councils

### Environmentally Sustainable Work Practices

- strategies and procedures for working in an environmentally sustainable manner in a specific automotive workplace and job role:
  - environmental risk management:
    - hazard identification
    - risk assessment
    - risk control
  - avoidance or minimisation strategies:
    - appropriate use of materials, tools and equipment
    - purchasing sustainable products
    - regular maintenance of tools, equipment and machinery
  - use of absorbent materials, drip and catchment trays and spill kits
  - efficient use of energy, water and resources:
    - use of alternative forms of energy or energy conservation
    - reducing emissions of greenhouse gases
    - reduction in energy, water and resource consumption
  - use of renewable, recyclable, reusable and recoverable resources
  - waste management
  - environmentally friendly cleaning
- workplace policy and procedures for environmentally sustainable work practices
- examples of best practice in relation to sustainability in the automotive industry
- propose improvements for environmentally sustainable work practices:
  - workplace
  - team
  - individual worker
3.3 Troubleshooting and problem-solving – mandatory focus area

3.3.1 Outcomes

The student:
- demonstrates an understanding of the troubleshooting process
- applies the troubleshooting process to common automotive faults and problems
- devises appropriate solutions to common automotive faults and problems.

3.3.2 Associated units of competency

The scope of learning for the HSC must be read and delivered in conjunction with the following associated unit of competency:

either
- AURAFA2004 Solve routine problems in an automotive workplace
or
- AURATA2001 Identify basic automotive faults using troubleshooting processes

The unit descriptor, elements and critical aspects for assessment for each of these units of competency are provided below.

**AURAFA2004 Solve routine problems in an automotive workplace**

*Descriptor*  
This unit describes the performance outcomes required to identify and clarify the nature of routine problems commonly encountered in an automotive workplace as they relate to automotive vehicle repair. It involves deciding on the best solution, implementing and evaluating solutions and assisting others to identify and resolve problems. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

*Elements*

1. Identify and clarify nature of the problem
2. Determine criteria for optimal solution and implement solution
3. Evaluate and report on effectiveness of solutions and outcomes
4. Assist others to identify, clarify and resolve problems in the workplace.

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

The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy all of the requirements of the performance criteria and required skills and knowledge.

A person who demonstrates competency in this unit must be able to:
- communicate effectively with others involved in or affected by the work
- identify indicators of problems or potential problems
- gather and evaluate information relating to the problem
- devise solutions
- implement solutions as they relate to mechanical or electrical faults or problems in an automotive workplace.
AURATA2001  Identify basic automotive faults using troubleshooting processes

Descriptor  This unit describes the performance outcomes required to conduct troubleshooting processes to identify common automotive faults or problems based on evidence provided by customers. Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Elements  1. Identify nature of the fault or problem
2. Identify fault using troubleshooting processes
3. Clean up work area and finalise work processes.

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

The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy all of the requirements of the performance criteria and required skills and knowledge.

A person who demonstrates competency in this unit must be able to:
- observe safety procedures and requirements
- select methods and techniques appropriate to the circumstances
- identify a range of basic automotive faults
- conduct troubleshooting procedures according to workplace, manufacturer and component supplier requirements
- complete workplace documentation according to workplace requirements.

3.3.3  Employability skills

The following employability skills have been considered in the development of the scope of learning for the HSC:
- communication
- problem-solving
- planning and reporting
- teamwork
- initiative and enterprise
- self-management
- learning
- technology.
### 3.3.4 Scope of learning for the HSC

#### terminology
- meaning of specific terms in an automotive industry context:
  - cause
  - diagnosis
  - fault
  - problem
  - symptom
  - troubleshooting

#### troubleshooting processes
- role of teamwork in troubleshooting and problem-solving
- importance of effective communication with colleagues and customers when undertaking troubleshooting and problem-solving
- troubleshooting process to identify faults and problems:
  - investigate a range of possible faults and problems
  - eliminate unlikely options
  - conduct tests on the vehicle and/or its components
  - interpret test results
  - formulate findings
  - confirm findings:
    - if findings are not confirmed, repeat steps to determine likely fault and/or problem
    - if findings are confirmed, investigate possible solution(s)
- strategies for troubleshooting faults and problems:
  - seek information from customer using:
    - effective verbal communication
    - open and closed questions
    - probing and leading questions
    - active listening
  - check vehicle’s repair and/or service history:
    - log book
    - previous order or quotation for repairs
  - visual inspection in accordance with:
    - automotive industry and work health and safety (WHS) guidelines
    - workplace policy and procedures
  - use of automotive industry diagnostic flowcharts
  - refer to manufacturer and/or supplier specifications
  - information analysis
  - follow written and verbal instructions of colleagues and/or supervisor
  - use of relevant tools, equipment and technology
  - consult technical experts
- examples of basic faults and problems that occur in vehicles and/or their components
### fault or problem resolution

- identification of possible solutions using:
  - mathematical problem-solving
  - brainstorming
  - lateral thinking
  - trial and error
  - substitution

- evaluating a range of possible solutions:
  - use of criteria to evaluate options, including:
    - availability
    - cost
    - time frames
    - advantages and disadvantages
  - elimination of unsuitable or less-favoured options
  - determination of optimal solution

- plan how the chosen solution will be implemented, including gaining approval to proceed

- evaluating the effectiveness of action taken:
  - final inspection to ensure satisfactory resolution of fault or problem
  - reporting actions and outcomes
  - revision of plans and/or strategies

### workplace policy and practices

- workplace policy and practices for troubleshooting and problem-solving

- importance of undertaking troubleshooting and problem-solving activities within scope of responsibility:
  - rectify
  - refer to appropriate personnel

- workplace policy and practices for reporting faults and problems that cannot be resolved effectively

- purpose and importance of documenting findings, recommendations and action taken in relation to troubleshooting and problem-solving
3.4 Working in the automotive industry and workplace – mandatory focus area

3.4.1 Outcomes

The student:
• examines the nature of the automotive industry
• demonstrates an understanding of working in the automotive industry
• explains how to communicate and work effectively with others in an automotive workplace
• applies automotive industry and workplace standards to ensure quality work outcomes
• explores how misunderstandings and conflict may be avoided or effectively managed in a range of situations common to automotive work environments.

3.4.2 Associated units of competency

The scope of learning for the HSC must be read and delivered in conjunction with the following associated unit of competency:

either
• AURAFA2003 Communicate effectively in an automotive workplace
or
• AURAMA2001 Work effectively with others

The unit descriptor, elements and critical aspects for assessment for each of these units of competency are provided below.

AURAFA2003 Communicate effectively in an automotive workplace

Descriptor
This unit describes the performance outcomes to communicate in an automotive workplace by oral and written means, including the use of automotive technical terminology and vehicle and component descriptions as they pertain to modern motor vehicles. Work requires individuals to communicate effectively with other persons in an automotive workshop or setting and includes communicating specific technical information. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Elements
1. Prepare for communication activities
2. Read routine documents
3. Write routine texts
4. Contribute to workplace communications
5. Operate workplace communication systems.

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

The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy all of the requirements of the performance criteria and required skills and knowledge.

A person who demonstrates competency in this unit must be able to:
• write short routine texts using correct spelling, punctuation and grammar
read, interpret and apply routine texts in the workplace
interpret and convey workplace information
apply and demonstrate workplace procedures for incoming and outgoing telephone calls
maintain workplace communications, including documents.

**AURAMA2001 Work effectively with others**

**Descriptor**
This unit of competency covers the competence to organise self, perform tasks, behave responsibly and work effectively as a member of a work group or team. Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

**Elements**
1. Contribute to determination of work roles
2. Contribute to planning of activities
3. Organise and accept responsibility for own workload
4. Maintain enterprise dress and grooming standards
5. Work with others
6. Participate in identifying and meeting own development needs
7. Work effectively and responsibly.

**Critical aspects for assessment and evidence required to demonstrate competency in this unit**
It is essential that competence is fully observed and there is ability to transfer competence to changing circumstances and to respond to unusual situations in the critical aspects of:
- organising and accepting responsibility for own workload
- following the designated work plan for the job
- contributing to collective planning, cooperative work and effective outcomes
- cooperating with others to complete work-oriented activities
- participating in identifying and meeting own development needs
- consistently applying enterprise and/or industry standards of dress and grooming
- consistently and responsibly applying enterprise policies and procedures in regard to workplace ethics, including interpretation of staff rosters, notification of availability for work and allocated duties/job description
- consistently applying enterprise policies and procedures and legislative requirements regarding non-discriminatory language and attitudes
- knowing own rights and responsibilities regarding awards/enterprise agreements.

**3.4.3 Employability skills**
The following employability skills have been considered in the development of the scope of learning for the HSC:
- communication
- teamwork
- problem-solving
- initiative and enterprise
- planning and reporting
- self-management
- learning
- technology.
### 3.3.4 Scope of learning for the HSC

#### Information on the industry

- **Basic research skills in order to obtain and use information:**
  - identifying and accessing relevant information
  - questioning techniques to obtain information
  - validating information
  - interpreting and using information
  - sorting, summarising and presenting information

- **Sources of information that can be used when gathering current and emerging information on the automotive industry:**
  - colleagues and manager/supervisor/team leader
  - experienced industry personnel
  - industry bodies and professional associations
  - internet
  - journals
  - libraries
  - networks
  - training courses
  - unions
  - workplace manuals

- **Opportunities to source and use a range of current and emerging information on the automotive industry:**
  - utilise online information systems and other information and communications technologies
  - integrate into daily work activities and operational duties
  - share researched information with colleagues

#### Nature of the industry

- **General features of the automotive industry**

- **General nature of allied and related industries and their relationship to the automotive industry**

- **For sectors within the automotive industry:**
  - primary role/function(s)
  - product(s) and/or service(s) provided
  - examples of businesses
  - interrelationship between sectors

- **For departments/sections/work areas in the automotive workplace:**
  - primary role/function(s)
  - product(s) and/or service(s) provided
  - occupational areas

- **Interrelationship between departments/sections/work areas and effect on an individual’s work and customer outcomes**
### nature of the industry cont/d

- primary role(s) and duties performed by a range of automotive personnel across automotive departments/sections/work areas

- customer service:
  - characteristics
  - industry approaches to service delivery:
    - underpinning principles
    - how work is organised and undertaken
    - strategies for establishing quality service

- features of current and in-trend products and services relevant to a range of automotive job roles

- current issues and trends affecting the automotive industry and implications for delivery of service and work outcomes

### working in the industry

- purpose and intent of legislative requirements relevant to the automotive industry and a particular sector/department:
  - Australian Consumer Law
  - Fair Work System
  - local council regulations

- application of legislative requirements to a specific automotive workplace and job role

- definition of quality assurance and an overview of the role of employees

- industry accreditation schemes:
  - purpose
  - examples
  - requirements
  - responsibilities of the participant
  - business benefits of participation

- purpose and value of a code of conduct for the automotive industry and worker

- purpose of occupational licensing and examples of licensing for the automotive industry and their requirements

- connection between quality assurance, work practices and customer service

- appreciate the value of work standards

- work standards for the automotive industry and specific to an automotive workplace and job role

- implications of non-adherence to work standards
working in the industry cont/d

- workplace policy, guidelines and procedures related to compliance when working in the automotive industry
- ramifications of failure to observe (non-compliance) legislative requirements, quality assurance processes/systems and workplace policy, guidelines and procedures

employment

- types of employment in the automotive industry:
  - full-time
  - part-time
  - casual
  - contract
- the difference between an award, agreement and contract and how they apply to workers in the automotive industry
- career pathways across the automotive industry and the knowledge and skills required for different job roles
- investigate the employment terms and conditions for a specific job role
- working knowledge of employer and employee rights and responsibilities in relation to employment and work
- equal employment opportunity (EEO):
  - principles
  - intent of EEO legislation
  - reciprocal rights and responsibilities of employers and employees
  - workplace policy and procedures relating to EEO
- primary role/function of a range of key cross-industry and sector-specific industry bodies for both employers and employees:
  - employer groups
  - professional associations
  - unions
  - employee groups

anti-discrimination

- bullying and harassment in the workplace:
  - indirect
  - direct
  - types:
    - verbal
    - physical
    - psychological
    - sexual
- principles of anti-discrimination
### anti-discrimination cont/d

- intent of anti-discrimination legislation
- reciprocal rights and responsibilities of employers and employees in relation to anti-discrimination
- workplace policy and procedures relating to anti-discrimination
- strategies to eliminate bias and harassment in the workplace
- consequences, including legal ramifications, of inappropriate workplace behaviour
- recourse available to individuals in the event of inappropriate workplace behaviour

### automotive worker

- automotive worker:
  - personal attributes and work ethic valued by the automotive industry
  - interpersonal skills beneficial to an individual working in an automotive workplace
  - importance of personal presentation and standards of personal hygiene
  - presentation standards for specific automotive workplace and job role
  - behaviour to support a safe and sustainable automotive work environment
  - use and understanding of technical information
- how personal values, opinions and ethics can affect everyday work
- duties and responsibilities:
  - for a specific job role within the automotive industry
  - relationship between an individual worker and the team/work group
  - differences between individual and workplace goals and plans
- industry currency:
  - importance of maintaining currency
  - individual and workplace strategies to maintain currency, including training and professional development
- feedback:
  - value of feedback to an individual worker, the workplace and the industry
  - sources of feedback:
    - personal reflection
    - formal/informal
    - direct/indirect
  - strategies for obtaining and interpreting feedback from supervisor(s) and colleague(s)
  - dealing with positive feedback and negative feedback
  - responsibility of a worker to seek and provide feedback and improve

### work practices

- an understanding that work practices and experiences differ between workplaces
- how work practices are implemented and maintained in accordance with industry standards and workplace policy, guidelines and procedures
**work practices cont/d**

- effect of poor work practices on colleagues, the workplace, the industry and customers

- tasks typical to an automotive workplace:
  - routine
  - rostered
  - non-routine

- access and use a range of sources containing information relating to work responsibilities (work instructions)

- strategies for understanding and clarifying work instructions

- a range of opportunities to read, interpret and follow instructions for work tasks of varying degrees of difficulty

- time and task management:
  - constraints
  - principles
  - techniques
  - prioritisation

- planning, organising and preparation for a range of tasks/activities applicable to daily work routines in an automotive workplace

- application of time-management techniques to work tasks/activities in an automotive workplace

- quality improvement in automotive industry:
  - role of employees in improving skills and productivity
  - connection between evaluating work performance and improving work practices
  - strategies to improve work practices and customer outcomes

- recording and reporting in the automotive industry:
  - workplace policy and procedures applying to record-keeping and reporting
  - legislative requirements for confidentiality and privacy
  - lines of communication and reporting typical of an automotive workplace

**technology**

- current and emerging technologies in the automotive industry and workplace

- impact of current and emerging technology on operational duties and service delivery

- role of current and emerging technology in development of new and improved work practices

- selection and use of technology appropriate to day-to-day work activities and work tasks in the automotive industry
### working with others

- importance of developing collegial work relationships
- communication in the workplace with colleagues and customers:
  - commonly used technical terminology
  - communication process/cycle
  - workplace examples of types of communication:
    - verbal
    - non-verbal
    - written
  - effective verbal, non-verbal and written communication
  - effective questioning and listening techniques
  - barriers to effective communication and strategies to overcome them
  - a range of communication methods/equipment used in the automotive industry:
    - general features
    - benefits
    - selection
    - use
- workplace protocols in relation to working with others
- importance of teamwork when working in the automotive workplace:
  - meaning of ‘team’ and ‘teamwork’
  - characteristics of effective teamwork
  - benefits of teamwork to the automotive workplace
  - examples of teams or work groups in an automotive workplace and their area(s) of responsibility and duties
- supporting others to achieve team/work group goals and tasks
- delivering quality work outcomes through teamwork and work groups

### cultural diversity

- concepts of cultural diversity, cultural awareness and inclusiveness
- workplace diversity:
  - benefits
  - need for tolerance in the workplace
  - importance of respect and sensitivity
  - proactive strategies for promoting workplace diversity and accommodating individual differences
  - culturally appropriate work practices
  - effective cross-cultural communication skills

### misunderstandings and conflict

- the difference between being passive, aggressive and assertive
- causes of misunderstandings and conflict when working with others and in the delivery of service
### misunderstandings and conflict cont/d

- the extent to which conflict can be a positive or negative experience

- **conflict management:**
  - conflict-resolution techniques
  - different approaches to conflict management, including problem-solving, negotiation and mediation
  - workplace policy and procedures regarding management of conflict

- identify own response to misunderstandings and conflict and evaluate personal approach to management and resolution of conflict

- identify when it is appropriate to seek assistance when misunderstandings or conflict arise and whose assistance should be sought when conflict escalates
3.5  Mechanical Technology – stream focus area

3.5.1  Outcomes

The student:
- demonstrates knowledge of automotive mechanical and electrical systems, components and technologies found in modern motor vehicles
- explains the fundamental operating principles of automotive mechanical and electrical systems and components found in modern motor vehicles
- demonstrates an understanding of concepts and basic principles related to electricity and circuit theory
- applies knowledge of automotive systems, components and technologies to the inspection and servicing of engines
- justifies the selection of appropriate tools and equipment for automotive work tasks
- communicates using correct industry terminology appropriate to the automotive workplace.

3.5.2  Associated units of competency

The scope of learning for the HSC must be read and delivered in conjunction with the following associated units of competency:

either
- **AURETR1003**  Apply automotive electrical system fundamentals
or
- **AURETR2007**  Demonstrate knowledge of automotive electrical circuits and wiring systems

and
- **AURLTA1001**  Apply automotive mechanical system fundamentals
- **AURTTE2004**  Inspect and service engines
- **AURTTK2002**  Use and maintain workplace tools and equipment

The unit descriptor, elements and critical aspects for assessment for each of these units of competency are provided below.

**AURETR1003  Apply automotive electrical system fundamentals**

**Descriptor**  This unit describes the performance outcomes required to apply basic knowledge, skills and understanding of electricity as it relates to the electrical systems, components and technologies found in modern motor vehicles. The unit involves the development of skills and knowledge that relate to the fundamental operating principles of electrical systems, including electrical controls; vehicle electrical systems, such as lighting, charging or control systems for engine management; and body management, including electrical accessories. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

**Elements**  1. Identify and apply electrical fundamentals
               2. Research and identify systems and components
               3. Locate systems and components
               4. Determine method of system or component operation.
Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy all of the requirements of the performance criteria and required skills and knowledge.

A person who demonstrates competency in this unit must be able to:

- identify and apply basic electrical terminology and circuit theory
- identify automotive electrical circuits, systems and components
- source relevant technical information
- locate electrical systems and components on modern motor vehicles
- explain the function of at least three major electrical systems of a modern motor vehicle
- demonstrate basic troubleshooting techniques to determine possible causes of electrical faults or problems
- communicate effectively using technical information and terms with others involved in or affected by the work.

AURETR2007 Demonstrate knowledge of automotive electrical circuits and wiring systems

Descriptor This unit describes the performance outcomes required to demonstrate knowledge of electrical principles that enable structured testing of basic circuits in electrical systems, components and technologies found in motor vehicles. The unit involves applying Ohm’s, Watts and Kirchhoff’s laws to enable basic structured problem solving to locate a range of common faults in vehicle electrical circuits and wiring systems. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Elements

1. Develop knowledge of vehicle electrical circuits and wiring systems
2. Demonstrate knowledge of vehicle electrical circuits and wiring systems
3. Demonstrate knowledge of electrical circuits as applied to vehicle fault identification.

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

The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy all of the requirements of the performance criteria and required skills and knowledge.

A person who demonstrates competency in this unit must be able to apply and demonstrate knowledge of:

- location of relevant sources of information on vehicle electrical circuits and wiring systems
- operating principles of electrical circuits and wiring systems
- relationship of volts, amps and ohms in a vehicle electrical circuit
- relationship of current flow and necessary wire gauge
- relationship of voltage dropping across a resistive load and the current flowing in the circuit
- circuit components, their function and operation in a vehicle electrical circuit
- testing principles and processes for checking a vehicle’s electrical circuits and wiring systems.
AURLTA1001  Apply automotive mechanical system fundamentals

Descriptor  This unit describes the performance outcomes required to demonstrate basic knowledge and awareness of automotive terminology and mechanical terms and principles as they apply to vehicle mechanical systems, components and technologies found in modern motor vehicles. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Elements  
1. Identify mechanical fundamentals
2. Identify operation of system or component
3. Locate system or component on vehicle
4. Apply mechanical fundamentals.

Critical aspects for assessment and evidence required to demonstrate competency in this unit
The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy all of the requirements of the performance criteria and the required skills and knowledge.

A person who demonstrates competency in this unit must be able to:
- identify automotive mechanical systems and components
- source relevant technical information
- locate mechanical systems and components on modern motor vehicles
- explain the function of at least three major systems of a modern motor vehicle
- demonstrate basic knowledge of possible causes of faults or problems with vehicle systems.

AURTTE2004  Inspect and service engines

Descriptor  This unit covers the competence required to carry out the inspection and service of two and four stroke spark ignition and two and four stroke compression ignition engines. Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Elements  
1. Prepare to undertake the inspection of engines
2. Conduct engine system inspections and analyse results
3. Prepare to service engines
4. Carry out servicing
5. Prepare vehicle for use or storage.

Critical aspects for assessment and evidence required to demonstrate competency in this unit
It is essential that competence in this unit signifies ability to transfer competence to changing circumstances and to respond to unusual circumstances in the critical aspects of:
- observing safety procedures and requirements
- communicating effectively with others involved in or affected by the work
- selecting methods and techniques appropriate to the circumstances
- completing preparatory activity in a systematic manner
- accurately inspecting, documenting and interpreting analysis results
• conducting inspection and servicing of a range of engines in accordance with workplace and manufacturer/component supplier requirements and specifications
• completing the work within workplace time frames
• equipment is presented to customer in compliance with workplace requirements.

AURTTK2002  Use and maintain workplace tools and equipment

Descriptor  This unit covers the competence required to select, safely use and maintain workplace tooling and equipment. Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Elements  1. Select correct tooling and equipment for workplace application
          2. Use of tooling and equipment
          3. Service and maintain workplace tooling and equipment
          4. Store and secure tooling and equipment.

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

It is essential that competence in this unit signifies ability to transfer competence to changing circumstances and to respond to unusual circumstances in the critical aspects of:
• selection and safe use of hand tooling
• selection and safe use of workplace equipment
• basic maintenance of tooling and equipment within the scope of operator responsibility
• selection and safe use of personal protective equipment.

3.5.3  Employability skills

The following employability skills have been considered in the development of the scope of learning for the HSC:
• communication
• teamwork
• problem-solving
• planning and reporting
• self-management
• learning
• technology.
### 3.5.4 Scope of learning for the HSC

#### Vehicle mechanical systems and components

- **common vehicle configuration for mechanical systems and components in light vehicles:**
  - cars
  - light commercial

- **vehicle mechanical systems and components:**
  - engine:
    - petrol
    - diesel
    - rotary
  - chassis:
    - steering
    - suspension
  - fuel:
    - carburettor
    - electronic fuel injection (EFI)
  - cooling:
    - liquid
    - air
  - braking
  - transmission and drivetrain
  - exhaust

- **for each mechanical system and component:**
  - identification
  - location and layout
  - components
  - function(s)
  - relationship between systems
  - current and emerging technologies

- **safe working practices and procedures, including risk management, when working with mechanical systems, components and technologies**

#### Technical information

- **sources of technical information for automotive mechanical systems, components and technologies:**
  - service bulletin
  - vehicle manufacturer and/or supplier manual
  - workplace procedures
  - written instructions

- **opportunities to source and use a range of technical information:**
  - validate and interpret information
  - integrate into daily work activities and operational duties
  - share researched information with colleagues
fundamental operating principles of mechanical systems and components

- industry-accepted terminology and commonly used jargon in the automotive industry
- fundamental operating principles for mechanical systems and components:
  - engine system:
    - differences in engine capacity
    - conversion of energy:
      - from chemical to mechanical
      - from reciprocation to rotary
    - engine operating cycles
    - valve timing
    - compression ratio
  - chassis system:
    - suspension
    - steering and steering angles and geometry
  - fuel system:
    - chemical composition of fuel
    - combustion process:
      - atomisation
      - air/fuel ratio (stoichiometric ratio)
      - vaporisation
  - cooling system:
    - effects of heat on engines
    - how heat is transferred within engines
    - purpose of a cooling system
    - behaviour of water and the need for additives to a cooling system
  - lubrication system:
    - oils
    - additives
  - brake system:
    - basic hydraulics
    - friction and the conversion of energy
    - coefficients of friction
  - transmission and drivetrain system:
    - basic gear theory
    - conventional universal joints
    - constant velocity (cv) joints
  - exhaust system:
    - production of condensation
    - control of gas and noise emissions

fault-finding

- common faults in light vehicle mechanical systems, components and technologies
- troubleshooting and problem-solving processes
- known solutions for a range of common/predictable problems in relation to vehicle mechanical systems, components and technologies
**electrical fundamentals**

- the nature of electricity, including electron theory

- types of electricity:
  - static
  - current:
    - conventional current
    - electron flow
  - a.c. (alternating) and d.c. (direct)

- meaning of:
  - ‘live’ and ‘dead’
  - isolated
  - closed circuit and open circuit

- International System of units (SI):
  - electric current (amperes)
  - electric potential (voltage)
  - power (watts)
  - resistance (ohms)

- electrical circuit (basic):
  - components of a simple circuit and their purpose:
    - conductor
    - energy source/power supply
    - load
    - protection device
    - switch
  - symbols used to represent each component in a circuit diagram
  - effects of an open circuit, a closed circuit and a short circuit
  - operating principles
  - relationship between volts, amps and ohms
  - industry-accepted terminology and commonly used jargon

- electrical wiring systems:
  - operating principles
  - relationship of current flow and wire gauge

- Ohm’s Law:
  - principle (V=IR)
  - relationship between voltage, current and resistance
  - graphical relationships of voltage, current and resistance
  - basic d.c. single path circuit:
    - voltage and current levels
    - relationship between voltage and current from measured values
    - effects of open circuit, closed circuit and short circuit

- Watt’s Law:
  - principle (P=VI)
  - relationships of power to current, voltage and resistance
### Electrical Fundamentals cont'd

- Kirchhoff’s Laws:
  - principle of conservation of electric charge
  - voltage and current in electrical circuits

- Circuit or schematic diagrams and major components for single-source d.c. series, parallel and series/parallel circuits

- Characteristics of series, parallel and series/parallel circuits:
  - current path(s)
  - load connection(s)
  - power dissipation
  - voltage drops

- Relationship between voltage drop and current flow

- Effect of an open, closed and short circuit in series, parallel and series/parallel circuits

- Industry applications of series, parallel and series/parallel circuits

- Setting up and connecting series, parallel and series/parallel circuits

- Measurement and calculation of values in series, parallel and series/parallel circuits:
  - resistance
  - voltage
  - current

### Vehicle Electrical Systems and Components

- Common vehicle configuration for electrical systems and components in light vehicles:
  - cars
  - light commercial

- Vehicle electrical systems and components:
  - engine:
    - charging
    - ignition
    - starting
    - engine management
  - internal and external lighting
  - body access:
    - door locking
    - power windows
    - security system
  - wiper and washer system
  - entertainment system
  - wiring harness and loom assembly
  - batteries
  - fuses and circuit breakers
### vehicle electrical systems and components cont/d

- for each electrical system and component:
  - identification
  - location
  - function(s)
  - operating principle(s)
  - relationship to light vehicle operation
  - current and emerging technologies

- safe working practices and procedures, including risk management, when:
  - working with electrical systems, components and technologies
  - working with electricity
  - measuring electrical values on a live circuit
  - isolating a device
  - selecting and using test instruments
  - testing or measuring ‘live’
  - dealing with unexpected situations or unplanned events

### testing electrical circuits, wiring systems and components

- common faults in light vehicle electrical circuits, wiring systems, components and technologies

- a range of electrical test equipment used to diagnose common faults, light vehicle electrical circuits, wiring systems, components and technologies

- potential hazards when using electrical instruments and safety control measures that should be taken

- troubleshooting and problem-solving processes

- known solutions to a range of common/predictable problems in relation to testing light vehicle electrical circuits, wiring systems, components and technologies

### technical information

- technical information about:
  - electricity as it relates to automotive applications
  - vehicle electrical circuits and wiring systems
  - service, maintenance and repair of vehicle electrical systems, components and technologies

- sources of technical information for automotive electrical systems and components:
  - service bulletin
  - vehicle manual
  - workplace procedures
  - written instructions

### tools and equipment

- difference between tool (hand, power and pneumatic), tooling and equipment
tools and equipment cont/d

- hand tools, power tools (electric, compressed air and hydraulic) and equipment:
  - for general use in the automotive industry
  - specific to mechanical technology

- for a range of hand tools, power tools and equipment:
  - name, general features/characteristics
  - purpose and limitations
  - use in the automotive workshop
  - selection:
    - to suit task/job requirements, working environment and operator training/skill level
    - according to workplace policy and procedures and licensing requirements

operation of automotive tools and equipment

- for a range of hand tools, power tools and equipment:
  - pre-operational checks
  - safe use in the workplace:
    - working with compressed air and electricity
    - hazard(s) and appropriate risk control(s)
    - use of personal protective equipment (PPE)
    - in accordance with:
      - safe work method statement (SWMS)
      - standard operating procedures (SOPs)
      - manufacturer/supplier recommendations
  - safe start-up, stopping and shutdown
  - management of waste, noise and dust

maintenance of tools and equipment

- maintenance for a range of hand tools, power tools and equipment:
  - includes:
    - checks/inspections before use, during use and after use
    - cleaning
    - routine maintenance
    - regular servicing
  - according to:
    - manufacturer/supplier recommendations and schedules
    - workplace policy and procedures
    - industry regulations and guidelines
  - maintenance log
  - methods to store tools and equipment in a safe and secure manner

problems with tools and equipment

- indicators of unsafe and/or faulty automotive tools and equipment

- safety and lockout tagging:
  - reasons for use
  - procedures
### problems with tools and equipment cont/d

- importance of responding within scope of responsibility:
  - rectify (minor adjustments)
  - refer to appropriate personnel

- solution(s) to common problems with automotive tools and equipment:

- recording and reporting

### inspecting engines

- engines:
  - two and four stroke spark ignition
  - two and four stroke compression ignition

- types of service/repair manuals (hard copy and electronic) and their layout

- nature and scope of work required for inspecting engines

- principles and techniques of time and task management

- work sequencing:
  - receiving instruction
  - organising for task
  - carrying out task
  - final checks
  - clean-up on completion

- safe work practices, including risk management, when inspecting engines

- environmentally sustainable work practices when inspecting engines

- visual, aural and functional engine inspection techniques

- workplace methods and procedures for inspecting engines in accordance with:
  - industry standards
  - legislative requirements
  - standard operating procedures (SOPs)
  - manufacturer/supplier specifications

- problems with engines:
  - range common to engines
  - testing and analysis
  - results:
    - compliance or non-compliance
    - documenting evidence, supporting information and recommendation(s)

### servicing engines

- difference between a routine service and a scheduled service
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<tr>
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<tr>
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<td>- quality assurance:</td>
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<td>- role of employees</td>
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<td>- implications of non-adherence</td>
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<td>- quality procedures as they apply to the individual’s own job/task/duties</td>
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<td>- compliance tests/checks to be undertaken to ensure quality assurance of finished product</td>
</tr>
<tr>
<td>- SOPs for non-compliance of work outcome to specification(s)</td>
</tr>
<tr>
<td>- workplace procedures for final inspection, cleaning of the vehicle, final approval and ‘sign-off’</td>
</tr>
</tbody>
</table>
3.6 Vehicle Body – stream focus area

3.6.1 Outcomes

The student:
- demonstrates knowledge of automotive electrical systems, components and technologies found in modern motor vehicles
- explains the fundamental operating principles of automotive electrical systems and components found in modern motor vehicles
- explains the processes and procedures for preparing vehicle body surfaces and components for repair work
- justifies the selection of appropriate tools and equipment for vehicle body repair tasks
- communicates using correct industry terminology appropriate to the automotive workplace.

3.6.2 Associated units of competency

The scope of learning for the HSC must be read and delivered in conjunction with the following associated units of competency:
- AURETR1003 Apply automotive electrical system fundamentals
- AURVTP2006 Prepare vehicle components for paint repairs
- AURVTN2003 Carry out pre-repair vehicle body operations
- AURTTK2002 Use and maintain workplace tools and equipment

The unit descriptor, elements and critical aspects for assessment for each of these units of competency are provided below.

AURETR1003 Apply automotive electrical system fundamentals

Descriptor
This unit describes the performance outcomes required to apply basic knowledge, skills and understanding of electricity as it relates to the electrical systems, components and technologies found in modern motor vehicles. The unit involves the development of skills and knowledge that relate to the fundamental operating principles of electrical systems, including electrical controls; vehicle electrical systems, such as lighting, charging or control systems for engine management; and body management, including electrical accessories. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Elements
1. Identify and apply electrical fundamentals
2. Research and identify systems and components
3. Locate systems and components
4. Determine method of system or component operation.

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

The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy all of the requirements of the performance criteria and required skills and knowledge.
A person who demonstrates competency in this unit must be able to:

- identify and apply basic electrical terminology and circuit theory
- identify automotive electrical circuits, systems and components
- source relevant technical information
- locate electrical systems and components on modern motor vehicles
- explain the function of at least three major electrical systems of a modern motor vehicle
- demonstrate basic troubleshooting techniques to determine possible causes of electrical faults or problems
- communicate effectively using technical information and terms with others involved in or affected by the work.

AURVTP2006  Prepare vehicle components for paint repairs

Descriptor  This unit of competency covers the skills and knowledge required to prepare body surfaces and apply primers and primer surfaces prior to final paint coats. Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Elements  1. Prepare for work
2. Prepare vehicle surfaces for painting
3. Apply primers
4. Prepare primed surface for refinishing
5. Clean up work area and maintain equipment.

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

It is essential that competence is fully observed and there is ability to transfer competence to changing circumstances and to respond to unusual situations in the critical aspects of:

- observing safety procedures and requirements
- communicating effectively with others involved in or affected by the work
- selecting methods and techniques appropriate to the circumstances
- completing preparatory activity in a systematic manner
- cleaning and masking the areas/equipment for paint repairs
- removing components and ancillary fittings for protection
- applying primers to manufacturer/component supplier specifications.

AURVTN2003  Carry out pre-repair vehicle body operations

Descriptor  This unit of competency covers the skills and knowledge required to clean components by mechanical or chemical means and to remove components in preparations for repair and/or storage. Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Elements  1. Prepare for work
2. Clean components prior to repairs and/or storage
3. Remove, tag and store components
4. Clean up work area and maintain equipment.
Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is fully observed and there is ability to transfer competence to changing circumstances and to respond to unusual situations in critical aspects of:

- observing safety procedures and requirements
- communicating effectively with others involved in or affected by the work
- selecting methods and techniques appropriate to the circumstances
- applying vehicle protection methods
- removing, cleaning, tagging and storing of a range of component parts
- completing workplace records.

AURTTK2002 Use and maintain workplace tools and equipment

Descriptor  This unit covers the competence required to select, safely use and maintain workplace tooling and equipment. Licensing, legislative, regulatory or certification requirements may apply to this unit in some jurisdictions. Users are advised to check with the relevant regulatory authority.

Elements  1. Select correct tooling and equipment for workplace application
          2. Use of tooling and equipment
          3. Service and maintain workplace tooling and equipment
          4. Store and secure tooling and equipment.

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

It is essential that competence in this unit signifies ability to transfer competence to changing circumstances and to respond to unusual circumstances in the critical aspects of:

- selection and safe use of hand tooling
- selection and safe use of workplace equipment
- basic maintenance of tooling and equipment within the scope of operator responsibility
- selection and safe use of personal protective equipment.

3.6.3 Employability skills

The following employability skills have been considered in the development of the scope of learning for the HSC:

- communication
- teamwork
- problem-solving
- planning and reporting
- self-management
- learning
- technology.
### 3.6.4 Scope of learning for the HSC

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electrical fundamentals cont/d

- effect of an open, closed and short circuit in series, parallel and series/parallel circuits
- setting up and connecting series, parallel and series/parallel circuits
- measurement and calculation of values in series, parallel and series/parallel circuits:
  - resistance
  - voltage
  - current

vehicle electrical systems and components

- common vehicle configuration for electrical systems and components in light vehicles:
  - cars
  - light commercial
- vehicle electrical systems and components:
  - engine:
    - charging
    - ignition
    - starting
    - engine management
  - internal and external lighting
  - body access:
    - door locking
    - power windows
    - security system
  - wiper and washer system
  - entertainment system
  - wiring harness and loom assembly
  - batteries
  - fuses and circuit breakers
- for each electrical system and component:
  - identification
  - location
  - function(s)
  - operating principle(s)
  - relationship to light vehicle operation
  - current and emerging technologies
- safe working practices and procedures, including risk management, when:
  - working with electrical systems, components and technologies
  - measuring electrical values on a live circuit
  - isolating a device
  - selecting and using test instruments
  - dealing with unexpected situations or unplanned events
### testing electrical circuits, wiring systems and components

- common faults in light vehicle electrical circuits, wiring systems, components and technologies
- a range of electrical test equipment used to diagnose common faults, light vehicle electrical circuits, wiring systems, components and technologies
- potential hazards when using electrical instruments and safety control measures that should be taken
- troubleshooting and problem-solving processes
- known solutions to a range of common/predictable problems in relation to testing light vehicle electrical circuits, wiring systems, components and technologies

### technical information

- technical information about:
  - vehicle electrical circuits and wiring systems
  - service, maintenance and repair of vehicle electrical systems, components and technologies
- sources of technical information for automotive electrical systems and components:
  - service bulletin
  - vehicle manual
  - workplace procedures
  - written instructions

### tools and equipment

- difference between tool (hand, power and pneumatic), tooling and equipment
- hand tools, power tools (electric, compressed air and hydraulic) and equipment:
  - for general use in the automotive industry
  - specific to vehicle body
- for a range of hand tools, power tools and equipment:
  - name, general features/characteristics
  - purpose and limitations
  - use in the automotive workshop
  - selection:
    - to suit task/job requirements, working environment and operator training/skill level
    - according to workplace policy and procedures and licensing requirements

### operation of automotive tools and equipment

- for a range of hand tools, power tools and equipment:
  - pre-operational checks
  - safe use in the workplace:
    - working with compressed air and electricity
    - hazard(s) and appropriate risk control(s)
### operation of automotive tools and equipment cont/d
- use of personal protective equipment (PPE)
- in accordance with:
  - safe work method statement (SWMS)
  - standard operating procedures (SOPs)
  - manufacturer/supplier recommendations
  - safe start-up, stopping and shutdown
  - management of waste, noise and dust

### maintenance of tools and equipment
- maintenance for a range of hand tools, power tools and equipment:
  - includes:
    - checks/inspections before use, during use and after use
    - cleaning
    - routine maintenance
    - regular servicing
  - according to:
    - manufacturer/supplier recommendations and schedules
    - workplace policy and procedures
    - industry regulations and guidelines
  - maintenance log
  - methods to store tools and equipment in a safe and secure manner

### problems with tools and equipment
- indicators of unsafe and/or faulty automotive tools and equipment
- safety and lockout tagging:
  - reasons for use
  - procedures
- importance of responding within scope of responsibility:
  - rectify (minor adjustments)
  - refer to appropriate personnel
- solution(s) to common problems with automotive tools and equipment:
- recording and reporting

### work tasks – pre-repair vehicle body operations and paint repairs preparation
- nature and scope of work required for pre-repair vehicle body operations and preparation for paint repairs
- safe work practices, including risk management, when undertaking pre-repair vehicle body operations and preparation for paint repairs
- environmentally sustainable work practices when undertaking pre-repair vehicle body operations and preparation for paint repairs
### work tasks – pre-repair vehicle body operations and paint repairs preparation cont/d

- principles and techniques of time and task management
- work sequencing:
  - receiving instruction
  - organising for task
  - carrying out task
  - final checks
  - clean-up on completion
- quality assurance:
  - definition
  - role of employees
  - implications of non-adherence
  - quality procedures as they apply to the individual’s own job/task/duties
  - SOPs for non-compliance of work outcome to specification(s)
- waste management:
  - storage of reusable by-products
  - sorting of recyclables
  - disposal of waste

### dismantling and removing components

- dismantling and removing a range of vehicle body components in preparation for:
  - inspection
  - assessment
  - replacement
  - repair
  - storage
- safe treatment of dismantled components:
  - marking/tagging
  - storage
- dismantling and removing components in a manner that prevents damage to work area, components and systems
- dismantling and removing components in accordance with:
  - automotive industry standards
  - SOPs
  - manufacturer/supplier specifications

### cleaning components

- cleaning a range of vehicle body components in preparation for:
  - inspection
  - assessment
  - replacement
  - repair
  - storage
### cleaning components cont/d

- cleaning agents and chemicals used when cleaning vehicle body components:
  - types
  - instructions:
    - product label
    - safety data sheet (SDS)
    - associated workplace documents
  - safe preparation and use:
    - directions and precautions
    - recommended dosage and dilution
    - calculating quantity required
    - first aid
    - storage
    - disposal

- safe work practices for the use and storage of hazardous substances

- chemical-related accidents:
  - workplace policy and procedures for dealing with these accidents
  - first aid for:
    - chemicals absorbed through the skin
    - chemical burns
    - chemicals digested
    - inhaled chemical fumes
    - chemical splashes in the eye

- automotive industry and workplace methods for cleaning vehicle body components:
  - appropriate to task
  - in a manner that prevents damage to work area, components and systems
  - manual and machine-assisted washing techniques
  - use of chemicals and protective coverings
  - in accordance with:
    - industry standards
    - legislative requirements
    - SOPs
    - manufacturer/supplier specifications

### record-keeping – pre-repair vehicle body operations

- purpose and importance of record-keeping for pre-repair vehicle body operations

- types of records including job cards and requests for additional parts/components

- manual and computerised records

### surface preparation for paint repairs

- industry and workplace practices for dismantling and removing vehicle body components in preparation for paint repairs
### surface preparation for paint repairs cont/d

- methods used in the preparation of surfaces for paint repairs:
  - rubbing down
  - masking
  - filling
- materials and equipment used in the preparation of surfaces for paint repairs

### application of primers

- for a range of primers:
  - name and characteristics
  - purpose and limitations
- equipment used in the application of primers
- automotive industry and workplace methods for the application of primers:
  - brushing
  - dipping
  - rolling
  - spraying
- application of primers in a manner that prevents damage to work area, components and systems

### refinishing primed surfaces

- automotive industry and workplace methods for refinishing primed surfaces
- materials and equipment used to refinish primed surfaces

### compliance

- surface preparation, application of primers and refinishing primed surfaces in accordance with:
  - industry standards
  - legislative requirements
  - SOPs
  - manufacturer/supplier specifications

### recording and reporting – preparation for paint repairs

- purpose and importance of record-keeping for preparation of paint repairs
- types of records including job cards
- manual and computerised records
- workplace practices for reporting (written and verbal) existing unreported damage
4 HSC examination

The Automotive Curriculum Framework includes an HSC examination which provides the opportunity for students to have this HSC examination mark contribute to the calculation of their Australian Tertiary Admission Rank (ATAR).

The Automotive HSC examination can contribute up to two units towards the calculation of a student’s ATAR.

Students who have completed the Automotive (240 indicative hours) course are eligible to sit for the Automotive HSC examination.

Students who want to sit for the Automotive HSC examination must be entered for both the Automotive (240 indicative hours) course and the Automotive examination on Schools Online (Administration).

The HSC examination specifications, which describe the format of the external HSC examination, are contained in the Assessment and Reporting in Automotive Stage 6 document.

The HSC examination is independent of the competency-based assessment undertaken during the course and has no impact on student eligibility for AQF VET qualifications.

4.1 Examinable outcomes and content

The HSC examination in Automotive is based on the HSC Content and employability skills for the Certificate II qualifications in this Framework (refer to the Employability Skills in Automotive document).

The HSC Content is detailed in Section 3 of this Syllabus.

4.2 Relationship of the Automotive (240 indicative hours) course structure to the HSC examination

The relationship between the Automotive (240 indicative hours) course structure, the HSC Content and the HSC examination is described in the Assessment and Reporting in Automotive Stage 6 document.
5 Other important information

5.1 Exclusions

Where there is significant overlap between an HSC VET course and other HSC VET or general education courses, the BOSTES has an exclusion between the courses. Exclusions are applied at a course level rather than at the unit of competency level.

In this Framework, students can only undertake the Automotive (120 indicative hours) course or the Automotive (240 indicative hours) course.

Schools should check all course exclusions when determining an appropriate pattern of study for their students.

VET course exclusions can be checked on the BOSTES website at www.boardofstudies.nsw.edu.au/voc_ed/exclusions.html.

5.2 Recognition of Prior Learning (RPL) and credit transfer within VET courses

Students who have current knowledge, skills or experience relevant to a VET course may be granted credit towards the course requirements.

Arrangements for RPL and credit transfer within VET courses, including processes, application forms and examples of possible scenarios, are detailed on the BOSTES website at www.boardofstudies.nsw.edu.au/voc_ed/rpl.html.

5.3 School-based apprentices and trainees

Information regarding provision for school-based apprentices and trainees within the HSC is available on the BOSTES website at www.boardofstudies.nsw.edu.au/voc_ed/apprenticeships-traineeships.html.


5.4 Students with special education needs

Students with special education needs may access a VET course in one of two ways:

- by undertaking the course under regular course arrangements, or
- by undertaking selected units of competency within the course that have been identified through the collaborative curriculum planning process.

For more information, see the VET Courses and Students with Special Education Needs fact sheet on the BOSTES website.
5.5 Access by students in Years 9 and 10 (Stage 5)

In certain circumstances students in Years 9 and 10 (Stage 5) may access Stage 6 VET courses. Further information is available on the BOSTES website at www.boardofstudies.nsw.edu.au/voc_ed/stage-5.html.
6 Glossary

AQF  
Australian Qualifications Framework  
The AQF is the policy framework that defines all qualifications recognised nationally in post-compulsory education and training in Australia. The AQF comprises titles and guidelines that define each qualification, as well as the principles and protocols covering cross-sectoral qualification links and the issuing of qualifications and statements of attainment.

Australian Apprenticeships  
Australian Apprenticeships encompass all apprenticeships and traineeships. They combine time at work with training and can be full-time, part-time or school-based (www.australianapprenticeships.gov.au).

competency  
The broad concept of industry competency concerns the ability to perform particular tasks and duties to the standard of performance expected in the workplace. Competency requires the application of specified skills, knowledge and attitudes relevant to effective participation in an industry, industry sector or enterprise.

core units of competency  
Units of competency required by the Training Package to be eligible for an AQF VET qualification.

elements of competency  
The basic building blocks of a unit of competency which describe the key activities or elements of the work covered by the unit.

focus areas  
HSC Content is organised into focus areas. HSC Content prescribes the scope of learning for the HSC.

mandatory units of competency  
Units of competency that must be studied for an HSC VET course.

recognition of prior learning (RPL)  
The result of an assessment of an individual’s non-formal and informal learning to determine the extent to which that individual has achieved the required learning outcomes, competency outcomes, or standards for entry to, and/or partial or total completion of, a qualification.

RTO  
Registered Training Organisation  
A training organisation registered by a registering body in accordance with the VET Quality Framework, within a defined scope of registration (include TAFE NSW institutes, private providers and school system RTOs).

scope of registration  
The particular services and products an RTO is registered to provide. The RTO’s scope defines the specific AQF VET qualifications, units of competency and accredited courses it is registered to provide, and whether it is registered to provide:

- both training delivery and assessment services, and to issue the relevant AQF VET qualifications and statements of attainment, or
- only assessment services, and to issue the relevant AQF VET qualifications and statements of attainment.
Stage 5  
In NSW, Stage 5 relates to Years 9 and 10 of schooling.

Stage 6  
In NSW, Stage 6 relates to Years 11 and 12 of schooling.

Statement of Attainment  
May be issued in the vocational education and training sector by an RTO when an individual has completed one or more units of competency from nationally recognised qualification(s)/course(s).

training.gov.au  
http://training.gov.au  
The national register for recording information about RTOs, Training Packages and accredited courses.

Training Package  
A nationally endorsed, integrated set of competency standards, assessment guidelines and AQF VET qualifications for a specific industry, industry sector or enterprise.

training plan  
A documented program of training and assessment required for an apprenticeship/traineeship training contract. It is developed by an RTO in consultation with the parties to the contract as the basis for training and assessing a person undertaking an apprenticeship or traineeship.

unit of competency  
Specification of industry knowledge and skill and the application of that knowledge and skill to the standard of performance expected in the workplace.

VET  
Vocational Education and Training

VET qualification  
Formal certification in the VET sector by an RTO that a person has satisfied all requirements of the units of competency or modules that comprise an AQF VET qualification, as specified by:
- a nationally endorsed Training Package, or
- an accredited course that provides training for the qualification.

VET Quality Framework  
The VET Quality Framework comprises:
- the Standards for NVR Registered Training Organisations
- the Fit and Proper Person Requirements
- the Financial Viability Risk Assessment Requirements
- the Data Provision Requirements, and
- the Australian Qualifications Framework.