



Automotive Technology

A/M/V

Written under the Industry and Services Framework 2017 Edition

Accredited from 2018– 2022 / Updated 2020

Supporting Qualifications from **AUR Automotive, Retail, Service and Repair Training Package**
(refer to training.gov.au):

AUR10120 **Cert I in Automotive Vocational Preparation**

AUR20720 **Cert II in Automotive Vocational Preparation**

Statement of Attainment towards a partial completion of AUR30620 **Cert III in Light Vehicle Mechanical Technology**

Front Cover Art provided by Canberra College student Aidan Giddings

Table of Contents

The ACT Senior Secondary System	1
ACT Senior Secondary Certificate	2
Vocational Education and Training in ACT Senior Secondary Schools.....	3
Learning Principles	4
General Capabilities	5
Rationale	9
Goals	9
Unit Titles	9
Organisation of Content	10
Assessment	11
Achievement Standards	12
Fundamentals Value: 1.0	16
Electrical Systems Value: 1.0	20
Engine Systems Value: 1.0	24
Vehicle Systems Value: 1.0	28
Independent Study (for Trade Skills Centres only) Value: 1.0	32
Automotive SWL 1 Value: 0.5	37
Automotive SWL 2 Value: 0.5	39
Appendix A – Implementation Guidelines	41
Appendix B – Course Developers	45
Appendix C – Common Curriculum Elements.....	46
Appendix D – Glossary of Verbs	47
Appendix E – Glossary for ACT Senior Secondary Curriculum	48
Appendix F – Implementation of VET Qualifications	49
Competency Based Assessment	54
Structured Workplace Learning (SWL): Assessment	55
Appendix G – Course Adoption	56

The ACT Senior Secondary System

The ACT senior secondary system recognises a range of university, vocational or life skills pathways.

The system is based on the premise that teachers are experts in their area: they know their students and community and are thus best placed to develop curriculum and assess students according to their needs and interests. Students have ownership of their learning and are respected as young adults who have a voice.

A defining feature of the system is school-based curriculum and continuous assessment. School-based curriculum provides flexibility for teachers to address students' needs and interests. College teachers have an opportunity to develop courses for implementation across ACT schools. Based on the courses that have been accredited by the BSSS, college teachers are responsible for developing programs of learning. A program of learning is developed by individual colleges to implement the courses and units they are delivering.

Teachers must deliver all content descriptions; however, they do have flexibility to emphasise some content descriptions over others. It is at the discretion of the teacher to select the texts or materials to demonstrate the content descriptions. Teachers can choose to deliver course units in any order and teach additional (not listed) content provided it meets the specific unit goals.

School-based continuous assessment means that students are continually assessed throughout years 11 and 12, with both years contributing equally to senior secondary certification. Teachers and students are positioned to have ownership of senior secondary assessment. The system allows teachers to learn from each other and to refine their judgement and develop expertise.

Senior secondary teachers have the flexibility to assess students in a variety of ways. For example: multimedia presentation, inquiry-based project, test, essay, performance and/or practical demonstration may all have their place. College teachers are responsible for developing assessment instruments with task specific rubrics and providing feedback to students.

The integrity of the ACT Senior Secondary Certificate is upheld by a robust, collaborative and rigorous structured consensus-based peer reviewed moderation process. System moderation involves all year 11 and 12 teachers from public, non-government and international colleges delivering the ACT Senior Secondary Certificate.

Only students who desire a pathway to university are required to sit a general aptitude test, referred to as the ACT Scaling Test (AST), which moderates student scores across courses and colleges. Students are required to use critical and creative thinking skills across a range of disciplines to solve problems. They are also required to interpret a stimulus and write an extended response.

Senior secondary curriculum makes provision for student-centred teaching approaches, integrated and project-based learning inquiry, formative assessment and teacher autonomy. ACT Senior Secondary Curriculum makes provision for diverse learners and students with mild to moderate intellectual disabilities, so that all students can achieve an ACT Senior Secondary Certificate.

The ACT Board of Senior Secondary Studies (BSSS) leads senior secondary education. It is responsible for quality assurance in senior secondary curriculum, assessment and certification. The Board consists of nominees from colleges, professional bodies, universities, industry, parent/carer organisations and unions. The Office of the Board of Senior Secondary Studies (OBSSS) consists of professional and administrative staff who support the Board in achieving its objectives and functions.

ACT Senior Secondary Certificate

Courses of study for the ACT Senior Secondary Certificate:

- provide a variety of pathways, to meet different learning needs and encourage students to complete their secondary education
- enable students to develop the essential capabilities for twenty-first century learners
- empower students as active participants in their own learning
- engage students in contemporary issues relevant to their lives
- foster students' intellectual, social and ethical development
- nurture students' wellbeing, and physical and spiritual development
- enable effective and respectful participation in a diverse society.

Each course of study:

- comprises an integrated and interconnected set of knowledge, skills, behaviours and dispositions that students develop and use in their learning across the curriculum
- is based on a model of learning that integrates intended student outcomes, pedagogy and assessment
- outlines teaching strategies which are grounded in learning principles and encompass quality teaching
- promotes intellectual quality, establish a rich learning environment and generate relevant connections between learning and life experiences
- provides formal assessment and certification of students' achievements.

Vocational Education and Training in ACT Senior Secondary Schools

The Board of Senior Secondary Studies is responsible for the certification of senior secondary school studies in government and non-government schools in the ACT. Students can undertake Vocational Education and Training (VET) as part of a senior secondary certificate and completion by a student can provide credit towards both a recognised VET qualification and a Senior Secondary School Certificate.

The BSSS certifies VET qualifications and Statements of Attainment on behalf of ACT colleges and high schools that offer Australian VET Qualifications and are Registered Training Organisations (RTOs) or have a Third-Party Service Agreement (TPSA) with an RTO. The Board also recognises VET qualifications delivered by external RTOs and facilitates the allocation of credit towards the ACT Senior Secondary Certificate based on assessment and hours of training.

The BSSS is not an RTO and is not responsible for those aspects that relate to VET delivery in schools or externally that fall within the role of the RTO.

Vocational programs must be assessed in accordance with the *Standards for Registered Training Organisations 2015* and the guidelines outlined in the relevant training package. Students undertaking A, T and M accredited vocational programs will be assessed against the criteria and achievement standards referenced in the framework to produce A-E grades and scores. They will also be assessed against competency standards as described in the relevant training package.

The BSSS certifies VET that:

- is listed on the national training.gov.au website; and
- is delivered and assessed by an ACT college or high school, which is an RTO or has a Third-Party Service Agreement (TPSA) with an RTO that has scope from the Australian Skills Quality Authority (ASQA) to deliver specified qualifications
- is delivered and assessed in accordance with relevant Training Package requirements.

Vocational learning contributes to the ACT Senior Secondary Certificate in a variety of ways:

- BSSS accredited A, T, and M vocational courses with embedded competencies delivered by colleges are reported with A–E grades
- BSSS accredited C courses (competency-based assessment only) delivered and assessed by colleges are reported with the grade 'P' (Pass) where at least one competency is achieved by the student; or 'Q?' 'Participated' where no competencies are achieved but attendance requirements are met
- BSSS E courses recognising study at external RTOs are reported with the grade 'P' (Pass)
- Australian School Based Apprenticeships (ASBAs) are reported as E courses with the grade 'P' (Pass).

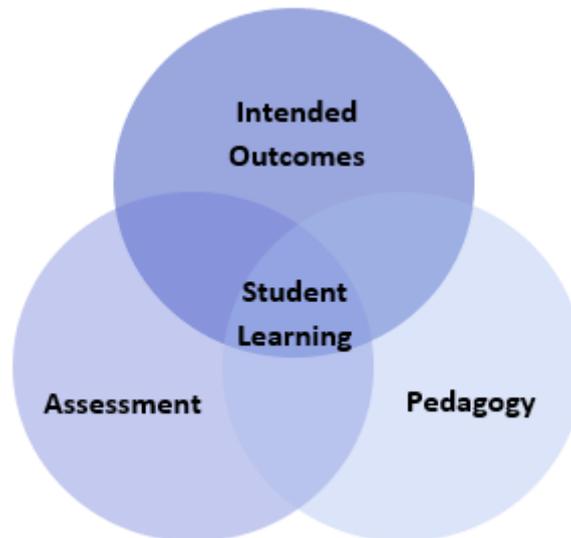
The BSSS credit arrangements recognise VET studies externally:

- through direct credit when the qualification or Units of Competence relate to a VET course that is being studied by the student
- towards the Senior Secondary Certificate, providing the VET does not duplicate content.

Implementing Vocational Education and Training Courses (Appendix F) provides further course information, including training package requirements, and should be read in conjunction with course documents.

Underpinning beliefs

- All students are able to learn.
- Learning is a partnership between students and teachers.
- Teachers are responsible for advancing student learning.



Learning Principles

1. Learning builds on existing knowledge, understandings and skills.
(Prior knowledge)
2. When learning is organised around major concepts, principles and significant real world issues, within and across disciplines, it helps students make connections and build knowledge structures.
(Deep knowledge and connectedness)
3. Learning is facilitated when students actively monitor their own learning and consciously develop ways of organising and applying knowledge within and across contexts.
(Metacognition)
4. Learners' sense of self and motivation to learn affects learning.
(Self-concept)
5. Learning needs to take place in a context of high expectations.
(High expectations)
6. Learners learn in different ways and at different rates.
(Individual differences)
7. Different cultural environments, including the use of language, shape learners' understandings and the way they learn.
(Socio-cultural effects)
8. Learning is a social and collaborative function as well as an individual one.
(Collaborative learning)
9. Learning is strengthened when learning outcomes and criteria for judging learning are made explicit and when students receive frequent feedback on their progress.
(Explicit expectations and feedback)

General Capabilities

All courses of study for the ACT Senior Secondary Certificate should enable students to develop essential capabilities for twenty-first century learners. These 'capabilities' comprise an integrated and interconnected set of knowledge, skills, behaviours and dispositions that students develop and use in their learning across the curriculum.

The capabilities include:

- literacy
- numeracy
- information and communication technology (ICT)
- critical and creative thinking
- personal and social
- ethical understanding
- intercultural understanding

Courses of study for the ACT Senior Secondary Certificate should be both relevant to the lives of students and incorporate the contemporary issues they face. Hence, courses address the following three priorities. These priorities are:

- Aboriginal and Torres Strait Islander histories and cultures
- Asia and Australia's engagement with Asia
- Sustainability

Elaboration of these General Capabilities and priorities is available on the ACARA website at www.australiancurriculum.edu.au.

Literacy

Students develop literacy as they learn how to communicate ideas, concepts and proposals to a variety of audiences. Students read and interpret written instructions for specific technologies, often including diagrams and procedural documents such as user manuals and design briefs. Students may write project outlines, briefs, concept proposals, evaluations and project reports as well as specifications for production.

The vocabulary used in Technology is often technical and includes specific terms for concepts, processes, materials, equipment and production. Students learn to understand that technological information is often presented in the form of drawings, diagrams, flow charts, models, tables and graphs. They also learn the importance of listening, talking and discussing the processes involved in technology particularly in articulating, questioning and evaluating ideas.

Numeracy

Numeracy provides students with the opportunity to interpret and use mathematical knowledge and skills in a range of situations. Students use numbers to calculate, measure and estimate; interpret and draw conclusions; measure and record; develop, refine and test concepts; and cost and sequence projects. When using software, materials, tools and equipment, students work with the concepts of number, geometry, scale, proportion, measurement and volume. Students may use three-dimensional models, create accurate technical drawings, work with digital models and use computational thinking in decision-making processes when designing and creating best-fit solutions.

Information and Communication Technology (ICT)

Students develop ICT capability when they enter or retrieve data using digital technologies and software applications according to organisational procedures.

Students develop skills using a range of software applications and digital hardware that enable them to realise their design ideas. Students use ICT when they investigate and analyse information, evaluate design ideas and communicate and collaborate online. They develop design ideas; generate plans and diagrams to communicate their designs and produce solutions using digital technologies, for example: drawings, models and manufacturing solutions (from basic drawing programs to computer-aided design/manufacture).

Critical and Creative Thinking

Students develop capability in critical and creative thinking as they imagine, generate, develop and evaluate ideas for their practical projects. Students will interact with others in analysing problems, refining their ideas, developing solutions and justifying their ideas.

Students may incorporate the use of technology to assist in problem solving. Students will identify and explore suitable technologies and incorporate that knowledge into a range of situations.

Students consider how data, information, systems, materials, tools and equipment (past and present) impact upon our lives, and how these may be better designed and managed.

Experimenting, drawing, modelling, designing and working with digital tools, equipment and software helps students to build their visual and spatial thinking and create solutions and products.

Personal and Social

Students develop personal and social capability by developing their social awareness when they work in a collaborative workspace. Students direct their own learning, plan and carry out investigations, and become independent learners who can apply design thinking, technologies understanding and skills when making decisions. They develop social and employability skills through working cooperatively in teams, sharing resources and processes, making group decisions, resolving conflict and showing leadership.

The Technologies learning area enhances students' personal and social capability by developing their social awareness. Students develop understanding of diversity by researching and identifying user needs. Students consider the impact their decisions have on people, communities and environments and develop social responsibility through understanding of, empathy with and respect for others.

Ethical Understanding

Students develop the capacity to understand and apply ethical and socially responsible principles when collaborating with others and creating, sharing and using technologies – materials, data, processes, tools and equipment. Students investigate past, current and future local, national, regional and global technological priorities. When engaged in systems thinking, students evaluate their findings against the criteria of environmental sustainability, health, social and emotional responsibility and social awareness. They explore issues associated with technologies and consider possibilities. Students are encouraged to develop values and attitudes.

Students learn about safe and ethical procedures for investigating and working with people, data and materials. They consider the rights of others and their responsibilities in using sustainable practices that protect the planet. They learn to appreciate and value the part they play in the social and natural systems in which they operate.

Students consider their own roles and responsibilities as discerning citizens, and learn to detect bias and inaccuracies. Understanding the protection of data, intellectual property and individual privacy in the school environment helps students to be ethical digital citizens.

Intercultural Understanding

Students consider how technologies are used in diverse communities at local, national, regional and global levels, including their impact and potential to transform people's lives. They explore ways in which past and present practices enable people to use technologies to interact with one another across cultural boundaries. Students investigate how cultural identities and traditions influence the function and form of solutions, products, services and environments designed to meet the needs of daily life in the present and in the future.

In their interactions with others in online communities, students consider the dynamic and complex nature of cultures, including values, beliefs, practices and assumptions. They recognise and respond to the challenges of cultural diversity by applying appropriate social protocols. Students learn about the interactions between technologies and society and take responsibility for securing positive outcomes for members of all cultural groups including those faced with prejudice and misunderstanding.

Cross-Curriculum Priorities

Aboriginal and Torres Strait Islander Histories and Cultures

The Aboriginal and Torres Strait Islander histories and cultures priority provides the opportunity for all young Australians to gain a deeper understanding and appreciation of Aboriginal and Torres Strait Islander histories and cultures, deep knowledge traditions and holistic world views. This knowledge and understanding will enrich all learners' ability to participate positively in the ongoing development of Australia through a deepening knowledge and connection with the world's oldest continuous living cultures.

The Aboriginal and Torres Strait Islander histories and cultures priority has been developed around the three key concepts of Country/Place, Peoples and Cultures. Each concept contains a number of organising ideas that provide a scaffold for developing related knowledge, understanding and skills. These are embedded in each learning area according to the relevance of its content to the organising ideas. An organising idea may draw on content from more than one learning area. Taken as a set, the organising ideas provide a coherent framework for the priority.

The first key concept highlights the special connection to Country/Place by Aboriginal and Torres Strait Islander Peoples and celebrates the unique belief systems that connect people physically and spiritually to Country/Place.

The second key concept examines the diversity of Aboriginal and Torres Strait Islander Peoples' culture through language, ways of life and experiences as expressed through historical, social and political lenses. It provides opportunities for students to gain a deeper understanding of Aboriginal and Torres Strait Islander Peoples' ways of being, knowing, thinking and doing.

The third key concept addresses the diversity of Aboriginal and Torres Strait Islander societies. It examines kinship structures and the significant contributions of Aboriginal and Torres Strait Islander people on a local, national and global scale.

Asia and Australia's Engagement with Asia

The Asia and Australia's engagement with Asia priority provides the opportunity for students to celebrate the social, cultural, political and economic links that connect Australia with Asia. This priority will ensure that students learn about and recognise the diversity within and between the countries of the Asia region. They will develop knowledge and understanding of Asian societies, cultures, beliefs and environments, and the connections between the peoples of Asia, Australia, and the rest of the world. Asia literacy provides students with the skills to communicate and engage with the peoples of Asia so they can effectively live, work and learn in the region.

The Asia and Australia's engagement with Asia priority has been developed around three key concepts: Asia and its diversity, achievements and contributions of the peoples of Asia and Asia-Australia engagement. These concepts are regarded as fundamental to learning in the priority. Each concept comprises a number of organising ideas that provide a scaffold for developing related knowledge, understanding and skills. These are embedded in each learning area according to the relevance of its content to the organising ideas. An organising idea may draw on content from more than one learning area. Taken as a set, the organising ideas provide a coherent framework for the priority.

The first key concept highlights the diversity within and between the countries of the Asia region, from their cultures, societies and traditions through to their diverse environments and the effects of these on the lives of people.

The second key concept examines the past and continuing achievements of the peoples of Asia, identifies their contribution to world history and acknowledges the influences that the Asia region has on the world's aesthetic and creative pursuits.

The third key concept addresses the nature of past and ongoing links between Australia and Asia, and develops the knowledge, understanding and skills, which make it possible to engage actively and effectively with peoples of the Asia region.

Sustainability

The Sustainability priority provides the opportunity for students to develop an appreciation of the necessity of acting for a more sustainable future and so address the ongoing capacity of Earth to maintain all life and meet the needs of the present without compromising the needs of future generations. This priority will allow all young Australians to develop the knowledge, skills, values and world views necessary for them to act in ways that contribute to more sustainable patterns of living. It will enable individuals and communities to reflect on ways of interpreting and engaging with the world. The Sustainability priority is futures-oriented, focusing on protecting environments and creating a more ecologically and socially just world through informed action. Actions that support more sustainable patterns of living require consideration of environmental, social, cultural and economic systems and their interdependence.

The Sustainability priority is futures-oriented and calls on students to act sustainably as individuals and to participate in collective endeavours that are shared across local, regional and global communities. It emphasises the interdependence of environmental, social, cultural and economic systems.

The Sustainability priority has been developed around three key concepts: systems, world views and, futures. These concepts are seen as fundamental to learning about sustainability. Each key concept contains a set of organising ideas that provide a scaffold for developing related knowledge, understanding and skills. These are embedded in each learning area according to the relevance of its content to the organising idea. An organising idea may draw on content from more than one learning area. Taken as a set, the organising ideas provide a coherent framework of the priority.

The first key concept explores the interdependent and dynamic nature of systems that support all life on Earth as well as the promotion of healthy social, economic and ecological patterns of living for our collective wellbeing and survival.

The second key concept presents the issues surrounding sustainability in a global context. This concept allows for a diversity of world views on ecosystems, values and social justice to be discussed and linked to individual and community actions for sustainability.

The third key concept is aimed at building the capacities for thinking and acting in ways that are necessary to create a more sustainable future. The concept seeks to develop reflective thinking processes and empower young people to design action that will lead to a more equitable, respectful and sustainable future.

Automotive Technology

A/M/V

Rationale

Automotive technology is a useful and relevant field of study with opportunities for further vocational or tertiary education. Automotive Technology will provide students with the knowledge, skills and understanding of industry practices, processes and procedures and concepts such as technical information, materials, sustainability, equipment and workplace health and safety in an evolving industry.

Goals

This course should enable students to:

- Study systems, components and configurations of general, electrical and engine systems of plant and vehicles
- Develop skills and understandings in how these systems work together to form a functional vehicle or plant
- Explore areas within the Automotive Technology industry
- Identify and follow environmental and sustainability requirements and follow best practice in the automotive workplace/ industry
- Elect to learn advanced welding, exploring Tungsten Inert Gas (TIG) and Metal Inert Gas (MIG) techniques (available to Trade skills centre only).

Unit Titles

- Fundamentals
- Electrical Systems
- Engine Systems
- Vehicle Systems
- Independent Study (Trade Skills Centres only)
Note: this unit is only available for Trade Skills Centres to deliver due to the specialised nature of the equipment required to deliver these units of competence.

Organisation of Content

Fundamentals

Students study general systems, components and configurations of stationary engines plant and vehicles. They explore areas of the automotive industry including employment sectors such as automotive mechanical, automotive electrical, automotive panel beating, automotive spare parts and automotive car sales. Students will also learn safety and emergency practices and procedures in the automotive workplace.

Electrical Systems

Students study electrical systems, components and configurations of plant and vehicles. They explore a range of areas, for example: circuits, batteries, starter motors, alternators and electrical test equipment and sensors.

Engine Systems

Students study engine systems, components and configurations of plant and vehicles. They explore engine parts such as pistons, valves, camshafts, crankshafts and how the individual components interact to create a functioning engine system.

Vehicles Systems

Students study individual systems and how they combine together to form a complete functional vehicle or plant. Some of these systems may include wheel and tyre assemblies, and suspension and braking systems. They learn to communicate effectively and resolve problems in the automotive workplace.

Independent Study (Trade Skills Centres only)

An Independent Study unit has an important place in senior secondary courses. It is a valuable pedagogical approach that empowers students to make decisions about their own learning. An Independent Study unit can be proposed by an individual student for their own independent study and negotiated with their teacher. The program of learning for an Independent Study unit must meet the unit goals and content descriptions as they appear in the course. Students must have studied at least **THREE** standard 1.0 units from this course.

This unit of study is only available for delivery by those Trade Skills Centres with the **Certificate III** units of competence on their scope of registration due to the specialised nature of equipment required to deliver these units of competence. Students study advanced welding techniques, exploring TIG and MIG within the automotive industry. Students must have studied a minimum of **THREE** standard 1.0 units from this course, including the Fundamentals Unit.

Assessment

The identification of criteria within the achievement standards and assessment tasks types and weightings provide a common and agreed basis for the collection of evidence of student achievement.

Assessment Criteria (the dimensions of quality that teachers look for in evaluating student work) provide a common and agreed basis for judgement of performance against unit and course goals, within and across colleges. Over a course, teachers must use all these criteria to assess students' performance but are not required to use all criteria on each task. Assessment criteria are to be used holistically on a given task and in determining the unit grade.

Assessment Tasks elicit responses that demonstrate the degree to which students have achieved the goals of a unit based on the assessment criteria. The Common Curriculum Elements (CCE) is a guide to developing assessment tasks that promote a range of thinking skills (see Appendix C). It is highly desirable that assessment tasks engage students in demonstrating higher order thinking.

Rubrics are constructed for individual tasks, informing the assessment criteria relevant for a particular task and can be used to assess a continuum that indicates levels of student performance against each criterion.

Assessment Criteria

Students will be assessed on the degree to which they demonstrate:

- knowledge and understanding
- skills.

Assessment Task Types

	Theory	Practical
	Suggested tasks: <ul style="list-style-type: none"> • test • folio • assignment • research project • cooperative task • planning tasks • risk assessments • presentations • drawings 	Suggested tasks: <ul style="list-style-type: none"> • demonstration • individual project/activity • group project • continuous observation (e.g. skills, WH&S) • folio • test • presentations • online collaboration/discussion forum
Weightings in A/V 1.0 and 0.5 units	30 - 40%	60 - 70%
Weighting in M/V 1.0 and 0.5 units	30 - 70%	30 - 70%

Additional Assessment Information

- For a standard unit (1.0), students must complete a minimum of three assessment tasks and a maximum of five.
- For a half standard unit (0.5), students must complete a minimum of two and a maximum of three assessment tasks.
- Assessment tasks for a standard (1.0) or half-standard (0.5) unit must be informed by the Achievement Standards.
- Students must experience a variety of task types and different modes of communication to demonstrate the Achievement Standards.

Achievement Standards

Years 11 and 12 Achievement Standards are written for A/T courses. A single achievement standard is written for M courses.

A Year 12 student in any unit is assessed using the Year 12 achievement standards. A Year 11 student in any unit is assessed using the Year 11 achievement standards. Year 12 achievement standards reflect higher expectations of student achievement compared to the Year 11 achievement standards. Years 11 and 12 achievement standards are differentiated by cognitive demand, the number of dimensions and the depth of inquiry.

An achievement standard cannot be used as a rubric for an individual assessment task. Assessment is the responsibility of the college. Student tasks may be assessed using rubrics or marking schemes devised by the college. A teacher may use the achievement standards to inform development of rubrics. The verbs used in achievement standards may be reflected in the rubric. In the context of combined Years 11 and 12 classes, it is best practice to have a distinct rubric for Years 11 and 12. These rubrics should be available for students prior to completion of an assessment task so that success criteria are clear.

Achievement Standards Industry & Services A Course - Year 11

	<i>A student who achieves an A grade typically</i>	<i>A student who achieves a B grade typically</i>	<i>A student who achieves a C grade typically</i>	<i>A student who achieves a D grade typically</i>	<i>A student who achieves an E grade typically</i>
Knowledge and understanding	<ul style="list-style-type: none"> analyses work practices, processes and procedures analyses technical information and specifications evaluates work, health and safety practices 	<ul style="list-style-type: none"> explains work practices, processes and procedures explains technical information and specifications analyses work, health and safety practices 	<ul style="list-style-type: none"> describes work practices, processes and procedures describes technical information and specifications describes work, health and safety practices 	<ul style="list-style-type: none"> identifies work practices, processes and procedures identifies technical information identifies work, health and safety practices 	<ul style="list-style-type: none"> identifies some work practices, processes and procedures identifies some technical information identifies some work, health and safety practices
Skills	<ul style="list-style-type: none"> applies with high proficiency, industry practices, processes and procedures to deliver a service and/or create a product applies with high proficiency, technical information and specifications to create high quality products and/or services solves problems, proposes solutions and justifies decisions in completing a task demonstrates with high proficiency, industry specific literacy and numeracy skills to a range of tasks demonstrates highly developed behaviours and attitudes and contributes positively to learning and work reflects with insight on own learning processes communicates with high proficiency, using a range of modes and medium using industry terminology and effectively organises materials and resources 	<ul style="list-style-type: none"> applies with proficiency, industry practices, processes and procedures to deliver a service and/or create a product applies with proficiency, technical information and specifications to create quality products and/or services solves problems, proposes solutions and explains decisions in completing a task demonstrates with proficiency, industry specific literacy and numeracy skills to a range of tasks demonstrates developed behaviours and attitudes and contributes positively to learning and work explains own learning processes communicates with proficiency, using industry terminology and competently organises materials and resources 	<ul style="list-style-type: none"> applies effectively industry practices, processes and procedures to deliver a service and/or create a product applies effectively technical information and specifications to create quality products and/or services solves problems, proposes solutions and describes decisions in completing a task demonstrates effectively industry specific literacy and numeracy skills to tasks demonstrates appropriate behaviours and attitudes and contributes positively to learning and work describes own learning processes communicates effectively, using industry terminology and organises materials and resources 	<ul style="list-style-type: none"> applies some industry practices, processes and procedures to deliver a service and/or create a product applies some technical information and specifications to create products and/or services follows instructions, guidelines and procedures demonstrates some industry specific literacy and numeracy skills to tasks demonstrates some appropriate behaviours and attitudes and mainly contributes positively to learning and work describes some learning processes communicates using some industry terminology and demonstrates some ability to organise materials and resources 	<ul style="list-style-type: none"> applies little or no industry practices, processes and procedures to deliver a service and/or create a product applies little or no technical information and specifications to create products and/or services follows simple instructions, guidelines and procedures demonstrates little or no industry specific literacy and numeracy skills to tasks demonstrates limited appropriate behaviours and attitudes describes limited learning processes communicates using little or no industry terminology and demonstrates little or no ability to organise materials and resources

Achievement Standards Industry & Services A Course - Year 12

	<i>A student who achieves an A grade typically</i>	<i>A student who achieves a B grade typically</i>	<i>A student who achieves a C grade typically</i>	<i>A student who achieves a D grade typically</i>	<i>A student who achieves an E grade typically</i>
Knowledge and understanding	<ul style="list-style-type: none"> analyses industry practices, processes and procedures and explains their significance in the application to workplace and/or work related contexts analyses technical information and specifications and evaluates a wide range of materials and equipment evaluates work, health and safety practices and analyses how they apply to the workplace and/or work related contexts 	<ul style="list-style-type: none"> explains industry practices, processes and procedures and describes their significance in the application to workplace and/or work related contexts explains technical information and specifications and describes a range of materials and equipment analyses work, health and safety practices and explains how they apply to the workplace and/or work related contexts 	<ul style="list-style-type: none"> describes industry practices, processes and procedures and identifies their significance in the application to workplace and/or work related contexts describes technical information and specifications and identifies a range of materials and equipment describes work, health and safety practices and identifies how they apply to the workplace and/or work related contexts 	<ul style="list-style-type: none"> identifies industry practices, processes and procedures with some reference to their significance in the application to workplace and/or work related contexts identifies technical information and specifications and identifies some materials and equipment identifies work, health and safety practices, with some reference to how they apply to the workplace and/or work related contexts 	<ul style="list-style-type: none"> identifies industry practices, processes and procedures with little or no reference to their significance in the application to workplace and/or work related contexts identifies some technical information with little or no reference to materials and equipment identifies work, health and safety practices, with little or no reference to how they apply to the workplace and/or work related contexts
Skills	<ul style="list-style-type: none"> applies with high proficiency, industry practices, processes and procedures to deliver a service and/or create a product applies with high proficiency, technical information and specifications to create high quality products and/or services solves problems, proposes solutions and justifies decisions in completing a task demonstrates with high proficiency, industry specific literacy and numeracy skills to a wide range of tasks demonstrates highly developed behaviours and attitudes and contributes positively to learning and work reflects with insight on own learning processes and needs related to industry and the workplace communicates with high proficiency, using industry terminology and effectively organises materials and resources 	<ul style="list-style-type: none"> applies with proficiency, industry practices, processes and procedures to deliver a service and/or create a product applies with proficiency, technical information and specifications to create quality products and/or services solves problems, proposes solutions and explains decisions in completing a task demonstrates with proficiency, industry specific literacy and numeracy skills to a range of tasks demonstrates developed behaviours and attitudes and contributes positively to learning and work explains own learning processes and needs related to industry and the workplace communicates with proficiency, using industry terminology and competently organises materials and resources 	<ul style="list-style-type: none"> applies effectively industry practices, processes and procedures to deliver a service and/or create a product applies effectively technical information and specifications to create quality products and/or services solves problems, proposes solutions and describes decisions in completing a task demonstrates effectively industry specific literacy and numeracy skills to tasks demonstrates appropriate behaviours and attitudes and contributes positively to learning and work describes own learning processes and needs related to industry and the workplace communicates effectively, using industry terminology and organises materials and resources 	<ul style="list-style-type: none"> applies some industry practices, processes and procedures to deliver a service and/or create a product applies some technical information and specifications to create products and/or services follows instructions, guidelines and procedures demonstrates some industry specific literacy and numeracy skills to tasks demonstrates some appropriate behaviours and attitudes and mainly contributes positively to learning and work describes some learning processes and needs related to industry and the workplace communicates using some industry terminology and demonstrates some ability to organise materials and resources 	<ul style="list-style-type: none"> applies little or no industry practices, processes and procedures to deliver a service and/or create a product applies little or no technical information and specifications to create products and/or services follows simple instructions, guidelines and procedures demonstrates little or no industry specific literacy and numeracy skills to tasks demonstrates limited appropriate behaviours and attitudes describes limited learning processes and needs related to industry and the workplace communicates using little or no industry terminology and demonstrates little or no ability to organise materials and resources

Achievement Standards Industry & Services M Course – Years 11 and 12

	<i>A student who achieves an A grade typically</i>	<i>A student who achieves a B grade typically</i>	<i>A student who achieves a C grade typically</i>	<i>A student who achieves a D grade typically</i>	<i>A student who achieves an E grade typically</i>
Knowledge and understanding	<ul style="list-style-type: none"> describes industry practices, processes and procedures independently describes technical information and specifications independently describes work, health and safety practices independently 	<ul style="list-style-type: none"> explains industry practices, processes and procedures with some assistance explains technical information and specifications with some assistance describes work, health and safety practices with some assistance 	<ul style="list-style-type: none"> describes industry practices, processes and procedures with assistance describes technical information and specifications with assistance recounts work, health and safety practices with assistance 	<ul style="list-style-type: none"> identifies industry practices, processes and procedures with continuous guidance identifies technical information with continuous guidance recounts work, health and safety practices with continuous guidance 	<ul style="list-style-type: none"> identifies some industry practices, processes and procedures identifies some technical information with direct instruction recounts work, health and safety practices with direct instruction
Skills	<ul style="list-style-type: none"> applies industry practices, processes and procedures to deliver a service and/or create a product independently applies technical information and specifications to products and/or services independently demonstrates industry specific literacy and numeracy skills to a range of tasks independently demonstrates behaviours and attitudes and contributes positively to learning independently communicates ideas using appropriate terminology independently 	<ul style="list-style-type: none"> applies industry practices, processes and procedures to deliver a service and/or create a product with some assistance applies technical information and specifications to products and/or services with some assistance demonstrates industry specific literacy and numeracy skills to a range of tasks with some assistance demonstrates behaviours and attitudes and contributes positively to learning with some assistance communicates ideas using appropriate terminology with some assistance 	<ul style="list-style-type: none"> applies industry practices, processes and procedures to deliver a service and/or create a product with assistance applies technical information and specifications to products and/or services with assistance demonstrates industry specific literacy and numeracy skills to a range of tasks with assistance demonstrates behaviours and attitudes and contributes positively to learning with assistance communicates ideas using appropriate terminology with assistance 	<ul style="list-style-type: none"> applies industry practices, processes and procedures to deliver a service and/or create a product with continuous guidance applies technical information and specifications to products and/or services with continuous guidance demonstrates industry specific literacy and numeracy skills to a range of tasks with continuous guidance demonstrates behaviours and attitudes and contributes positively to learning with continuous guidance communicates ideas using appropriate terminology with continuous guidance 	<ul style="list-style-type: none"> applies industry practices, processes and procedures to deliver a service and/or create a product with direct instruction applies technical information and specifications to products and/or services with direct instruction demonstrates industry specific literacy and numeracy skills to a range of tasks with direct instruction demonstrates behaviours and attitudes and contributes positively to learning with direct instruction communicates ideas using appropriate terminology with direct instruction

Fundamentals

Value: 1.0

Fundamentals a

Value 0.5

Fundamentals b

Value 0.5

Unit Description

Students study general systems, components and configurations of stationary engines, plant and vehicles. They explore areas of the automotive industry including employment sectors such as automotive mechanical, automotive electrical, automotive panel beating, automotive spare parts and automotive car sales. Students will also learn safety and emergency practices and procedures in the automotive workplace.

Specific Unit Goals

This unit should enable students to:

A Course	M Course
<ul style="list-style-type: none"> recognise hazards in the workplace identify and apply basic safety and emergency practices and procedures in the workplace identify and demonstrate knowledge of mechanical systems and components select, use, maintain and store workplace tools and equipment carry out minor adjustments to outdoor power equipment 	<ul style="list-style-type: none"> recognise hazards in the workplace identify and apply basic safety practices and procedures in the workplace use and store workplace tools and equipment

Content Descriptions

All knowledge, understanding and skills below must be delivered:

A Course	M Course
Industry, processes and procedures	
<ul style="list-style-type: none"> analyse practices, processes and procedures and their significance in a work context apply workplace procedures in technical applications. For example, use, service, maintain and store workplace tools and equipment demonstrate skills in organising work area and equipment in line with workplace standards complete documentation according to industry guidelines 	<ul style="list-style-type: none"> apply work practices, processes and procedures demonstrate skills in organising work area and equipment in line with workplace standards complete workplace documentation

A Course	M Course
Technical information	
<ul style="list-style-type: none"> • demonstrate knowledge of mechanical systems and components • select and use correct tools for the task • make minor adjustments to outdoor power equipment • apply technical information and specifications to complete a task 	<ul style="list-style-type: none"> • demonstrate knowledge of mechanical systems and components • use tools correctly • apply technical information to complete a task
Workplace, health and safety	
<ul style="list-style-type: none"> • identify and apply basic safety and emergency practices and procedures in the workplace • analyse risk hazards, seek appropriate assistance and apply safety strategies • demonstrate knowledge of types and use of personal protective equipment (PPE) 	<ul style="list-style-type: none"> • apply basic safety procedures including the use of PPE and/or seek appropriate assistance
Problem solving	
<ul style="list-style-type: none"> • identify and define problems, analyse different possible solutions and select the best solution • interact with others in solving problems, proposing solutions and justifying ideas 	<ul style="list-style-type: none"> • solve simple problems and explain choices
Industry literacy and numeracy	
<ul style="list-style-type: none"> • source and interpret procedures and information prior to maintenance and or repair • interpret information from instruction manuals • interpret simple numerical information in workplace procedures, equipment and materials. For example, understand the progression of fractions in imperial tools • use and communicate basic numerical information that relates to automotive systems and components • identify different sizes of metric and imperial tools 	<ul style="list-style-type: none"> • interpret information from instruction manuals • interpret simple numerical information in the workplace • identify different sizes of metric and imperial tools
Behaviour and attitudes in the workplace	
<ul style="list-style-type: none"> • understand how self-management skills contribute to positive outcomes • demonstrate behaviours and attitudes which contribute positively to learning and work 	<ul style="list-style-type: none"> • demonstrate appropriate behaviours and attitudes which contribute positively to learning and work

A Course	M Course
Reflection on own learning	
<ul style="list-style-type: none"> • reflect on own learning processes and needs within the workplace • analyse and use workplace criteria to self-assess and reflect on whether own work meets standards 	<ul style="list-style-type: none"> • identify and reflect on own learning needs
Communication	
<ul style="list-style-type: none"> • use technical terms correctly when communicating with others • report inspection findings according to workplace procedures • articulate ideas to seek assistance, clarify, offer suggestions or justify approaches • actively listen to guide learning and respond to feedback 	<ul style="list-style-type: none"> • apply basic communication • seek assistance • follow instructions

A guide to reading and implementing content descriptions

Content descriptions specify the knowledge, understanding and skills that students are expected to learn and that teachers are expected to teach. Teachers are required to develop a program of learning that allows students to demonstrate all the content descriptions. The lens which the teacher uses to demonstrate the content descriptions may be either guided through provision of electives within each unit or determined by the teacher when developing their program of learning.

A program of learning is what a college provides to implement the course for a subject. It is at the discretion of the teacher to emphasis some content descriptions over others. The teacher may teach additional (not listed) content provided it meets the specific unit goals. This will be informed by the student needs and interests.

For colleges wishing to deliver the VET qualification, there is flexibility for a teacher (provided the RTO has scope) to develop a program of learning aligned with the elements of the VET competencies and A/T content descriptions. The knowledge, skills and understandings within the competencies reflect the knowledge, skills and understandings of the BSSS course unit content descriptions.

Alternatively, a college may choose the A/T course without the VET qualification. In delivering the course teachers will write a program of learning aligned with students' needs and interests, meeting the A/T content descriptions.

Units of Competency

Competence must be demonstrated over time and in the full range of automotive contexts. Teachers must use this unit document in conjunction with the Units of Competence from the AUR Automotive Retail, Service and Repair Training Package, which provides performance criteria, range statements and assessment contexts.

Teachers must address **all content** related to the competencies embedded in this unit. Reasonable adjustment may be made only to the mode of delivery, context and support provided according to individual student needs.

Competencies are attached to units and must be delivered in those units. However, ongoing assessment of competencies can occur while the student is enrolled as an ACT Senior Secondary student.

In order to be deemed competent to industry standard, assessment must provide authentic, valid, sufficient and current evidence as indicated in the relevant Training Package.

Certificate I in Automotive Vocational Preparation

The following **core** units must be delivered and assessed over the semester:

Code	Competency Title
AURASA001	Apply automotive workplace safety fundamentals
AURLTA101	Identify automotive mechanical systems and components
AURTTK102	Use and maintain tools and equipment in an automotive workplace

The following **elective** competency must also be delivered:

Code	Competency Title
AURPTA102	Carry out minor adjustments to outdoor power equipment

All units of competency are optional for students undertaking an M course.

Assessment

Refer to pages 11-12.

Electrical Systems

Value: 1.0

Electrical Systems a

Value 0.5

Electrical Systems b

Value 0.5

Unit Description

Students study electrical systems, components and configurations of plant and vehicles. They explore a range of areas, for example circuits, batteries, starter motors, alternators and electrical test equipment and sensors.

Specific Unit Goals

This unit should enable students to:

A Course	M Course
<ul style="list-style-type: none"> • identify general workplace sustainability practices • identify methods of controlling hazards • locate, identify and demonstrate knowledge of electrical systems and its components • prepare and carry out soldering of components, circuits and wiring 	<ul style="list-style-type: none"> • identify general workplace sustainability practices • demonstrate knowledge of electrical systems and its components • carry out soldering tasks

Content Descriptions

All knowledge, understanding and skills below must be delivered:

A Course	M Course
Industry practices, processes and procedures	
<ul style="list-style-type: none"> • analyse and identify practices, processes and procedures and their significance in controlling hazards to the environment • demonstrate skills in organising work area and equipment in line with workplace standards • soldering is carried out, inspected visually and tested to workplace standards 	<ul style="list-style-type: none"> • identify methods of controlling hazards to the environment • demonstrate skills in organising work area and equipment in line with workplace standards • soldering is carried out and tested
Technical information	
<ul style="list-style-type: none"> • demonstrate knowledge of electrical systems and components • select and use correct tools • prepare soldering operations • diagnose and repair electrical systems • apply technical information and specifications to complete a task • select and demonstrate use of low voltage test equipment 	<ul style="list-style-type: none"> • demonstrate knowledge of electrical systems and components • use tools correctly • prepare soldering operations • use test equipment • select and demonstrate use of low voltage test equipment

A Course	M Course
Workplace, health and safety	
<ul style="list-style-type: none"> • identify and apply basic safety practices and procedures in the workplace • demonstrate knowledge of types and use of personal protective equipment (PPE) • analyse risk hazards, seek appropriate assistance and apply safety strategies 	<ul style="list-style-type: none"> • recognise hazards in the workplace • follow safe work practices including the use of PPE or seek appropriate assistance
Problem solving	
<ul style="list-style-type: none"> • identify and define problems, analyse different possible solutions and select the best solution • interact with others in solving problems, proposing solutions and justifying ideas 	<ul style="list-style-type: none"> • identify problems and possible solutions • interact with others in solving problems
Industry literacy and numeracy	
<ul style="list-style-type: none"> • source and interpret procedures and information from instruction manuals prior to completing work task • apply simple numerical information in workplace procedures, equipment and materials such as measuring volts, amps, watts, ohms • use and communicate basic numerical information that relates to automotive systems and components, for example, OHMS law 	<ul style="list-style-type: none"> • source instruction manuals as required • use and communicate basic numerical information that relates to automotive systems and components
Behaviour and attitudes in the workplace	
<ul style="list-style-type: none"> • demonstrate behaviours and attitudes which contribute positively to learning and work • understand how self-management skills contribute to positive outcomes 	<ul style="list-style-type: none"> • demonstrate behaviours and attitudes which contribute positively to learning and work
Reflection on own learning	
<ul style="list-style-type: none"> • reflect on own learning processes and needs within the workplace • analyse and use workplace criteria to self-assess and reflect on whether own work meets standards 	<ul style="list-style-type: none"> • reflect on own learning needs
Communication	
<ul style="list-style-type: none"> • use technical terms correctly when communicating with others • report inspection findings according to workplace procedures • articulate ideas to seek assistance, clarify, offer suggestions or justify approaches • actively listen to guide learning and respond to feedback 	<ul style="list-style-type: none"> • use technical terms • actively listen to guide learning and respond to feedback

A guide to reading and implementing content descriptions

Content descriptions specify the knowledge, understanding and skills that students are expected to learn and that teachers are expected to teach. Teachers are required to develop a program of learning that allows students to demonstrate all the content descriptions. The lens which the teacher uses to demonstrate the content descriptions may be either guided through provision of electives within each unit or determined by the teacher when developing their program of learning.

A program of learning is what a college provides to implement the course for a subject. It is at the discretion of the teacher to emphasis some content descriptions over others. The teacher may teach additional (not listed) content provided it meets the specific unit goals. This will be informed by the student needs and interests.

For colleges wishing to deliver the VET qualification, there is flexibility for a teacher (provided the RTO has scope) to develop a program of learning aligned with the elements of the VET competencies and A/T content descriptions. The knowledge, skills and understandings within the competencies reflect the knowledge, skills and understandings of the BSSS course unit content descriptions.

Alternatively, a college may choose the A/T course without the VET qualification. In delivering the course teachers will write a program of learning aligned with students' needs and interests, meeting the A/T content descriptions.

Units of Competency

Competence must be demonstrated over time and in the full range of automotive contexts. Teachers must use this unit document in conjunction with the Units of Competence from the AUR Automotive Retail, Service and Repair Training Package, which provides performance criteria, range statements and assessment contexts.

Teachers must address **all content** related to the competencies embedded in this unit. Reasonable adjustment may be made only to the mode of delivery, context and support provided according to individual student needs.

Competencies are attached to units and must be delivered in those units. However, ongoing assessment of competencies can occur while the student is enrolled as an ACT Senior Secondary student.

In order to be deemed competent to industry standard, assessment must provide authentic, valid, sufficient and current evidence as indicated in the relevant Training Package.

Certificate I in Automotive Vocational Preparation

The following **core** units must be delivered and assessed over the semester:

Code	Competency Title
AURAEA001	Identify environmental and sustainability requirements in an automotive service or repair workplace
AURETR103	Identify automotive electrical systems and components

The following **elective** competencies must also be delivered:

Code	Competency Title
AURETK001	Identify, select and use low voltage electrical test equipment
AURETR006	Solder electrical wiring and circuits

All units of competency are optional for students undertaking an M course.

Assessment

Refer to pages 11-12.

Engine Systems

Value: 1.0

Engine Systems a

Value 0.5

Engine Systems b

Value 0.5

Unit Description

Students study engine systems, components and configurations of plant and vehicles. They explore engine parts such as pistons, valves, camshafts, crankshafts and how the individual components interact to create a functioning engine system.

Specific Unit Goals

This unit should enable students to:

A Course	M Course
<ul style="list-style-type: none"> • identify, remove and tag engine system components • identify environmental and sustainability best practices relating to the automotive workplace • follow general workplace environmental and sustainability practices • identify and follow workplace safety and emergency procedures 	<ul style="list-style-type: none"> • demonstrate knowledge of engine systems and components • follow general workplace environmental and sustainability practices • follow workplace safety and emergency procedures

Content Descriptions

All knowledge, understanding and skills below must be delivered:

A Course	M Course
Industry practices, processes and procedures	
<ul style="list-style-type: none"> • analyse, explain and follow practices and procedures in controlling hazards to the environment • demonstrate skills in organising work area and equipment in line with workplace and safety procedures • identify and follow workplace emergency procedures • analyse engine system components in order to remove and tag according to workplace standards 	<ul style="list-style-type: none"> • follow methods of controlling hazards to the environment • demonstrate skills in organising work area and equipment in line with workplace and safety procedures • follow workplace emergency procedures • demonstrate removal and tagging of engine system components

A Course	M Course
Technical information	
<ul style="list-style-type: none"> • demonstrate knowledge of engine systems and components • select and use correct tools • complete workplace documentation • apply technical information and specifications to complete a task 	<ul style="list-style-type: none"> • demonstrate knowledge of engine systems and components • use tools correctly
Workplace, health and safety	
<ul style="list-style-type: none"> • identify and follow safety practices and procedures in the workplace • analyse risk hazards, seek appropriate assistance and follow safety strategies • demonstrate knowledge of types and use of personal protective equipment (PPE) 	<ul style="list-style-type: none"> • follow safe work practices including the use of PPE or seek appropriate assistance
Problem solving	
<ul style="list-style-type: none"> • identify and report problems, analyse different possible solutions and select the best solution • identify and define problems, analyse different possible solutions and select the best solution • interact with others in solving problems, proposing solutions and justifying ideas 	<ul style="list-style-type: none"> • identify problems and possible solutions • interact with others in solving problems
Industry literacy and numeracy	
<ul style="list-style-type: none"> • source and interpret procedures and information from instruction manuals prior to completing work tasks • apply simple numerical information in workplace procedures, use of equipment and materials for example, measuring, tolerances • use and communicate basic numerical information that relates to engine systems and components for example swept volume, compression ratios 	<ul style="list-style-type: none"> • source instruction from manuals as required • use and communicate basic numerical information that relates to engine systems and components
Behaviour and attitudes in the workplace	
<ul style="list-style-type: none"> • demonstrate behaviours and attitudes which contribute positively to learning and work • understand how self-management skills contribute to positive outcomes 	<ul style="list-style-type: none"> • demonstrate behaviours and attitudes which contribute positively to learning and work

A Course	M Course
Reflection on own learning	
<ul style="list-style-type: none"> • reflect on own learning processes and needs within the workplace • analyse and use workplace criteria to self-assess and reflect on whether own work meets standards 	<ul style="list-style-type: none"> • reflect on own learning needs
Communication	
<ul style="list-style-type: none"> • use technical terms correctly when communicating with others • report inspection findings according to workplace procedures • articulate ideas to seek assistance, clarify, offer suggestions or justify approaches • actively listen to guide learning and respond to feedback 	<ul style="list-style-type: none"> • use technical terms • actively listen to guide learning and respond to feedback

A guide to reading and implementing content descriptions

Content descriptions specify the knowledge, understanding and skills that students are expected to learn and that teachers are expected to teach. Teachers are required to develop a program of learning that allows students to demonstrate all the content descriptions. The lens which the teacher uses to demonstrate the content descriptions may be either guided through provision of electives within each unit or determined by the teacher when developing their program of learning.

A program of learning is what a college provides to implement the course for a subject. It is at the discretion of the teacher to emphasis some content descriptions over others. The teacher may teach additional (not listed) content provided it meets the specific unit goals. This will be informed by the student needs and interests.

For colleges wishing to deliver the VET qualification, there is flexibility for a teacher (provided the RTO has scope) to develop a program of learning aligned with the elements of the VET competencies and A/T content descriptions. The knowledge, skills and understandings within the competencies reflect the knowledge, skills and understandings of the BSSS course unit content descriptions.

Alternatively, a college may choose the A/T course without the VET qualification. In delivering the course teachers will write a program of learning aligned with students' needs and interests, meeting the A/T content descriptions.

Units of Competency

Competence must be demonstrated over time and in the full range of automotive contexts. Teachers must use this unit document in conjunction with the Units of Competence from the AUR Automotive Retail, Service and Repair Training Package, which provides performance criteria, range statements and assessment contexts.

Teachers must address **all content** related to the competencies embedded in this unit. Reasonable adjustment may be made only to the mode of delivery, context and support provided according to individual student needs.

Competencies are attached to units and must be delivered in those units. However, ongoing assessment of competencies can occur while the student is enrolled as an ACT Senior Secondary student.

In order to be deemed competent to industry standard, assessment must provide authentic, valid, sufficient and current evidence as indicated in the relevant Training Package.

Certificate I in Automotive Vocational Preparation

The following **core** units must be delivered and assessed over the semester:

Code	Competency Title
Nil required	

The following **elective** competency must also be delivered:

Code	Competency Title
AURTTE003	Remove and tag engine system components

Certificate II in in Automotive Vocational Preparation

The following **core** units must be delivered and assessed over the semester:

Code	Competency Title
AURAEA002	Follow environmental and sustainability best practice in an automotive workplace
AURASA102	Follow safe working practices in an automotive workplace

The following **elective** competency must also be delivered:

Code	Competency Title
Nil required	

All units of competency are optional for students undertaking an M course.

Assessment

Refer to pages 11-12.

Vehicle Systems

Value: 1.0

Vehicle Systems a

Value 0.5

Vehicle Systems b

Value 0.5

Unit Description

Students study individual systems and how they combine together to form a complete functional vehicle or plant. Some of these systems may include wheel and tyre assemblies, suspension and braking systems. They learn to communicate effectively and resolve problems in the automotive workplace.

Specific Unit Goals

This unit should enable students to:

A Course	M Course
<ul style="list-style-type: none"> • communicate effectively in an automotive workplace • remove and tag steering, suspension and braking system components • remove, inspect and refit light vehicle wheel and tyre assemblies • resolve routine problems in an automotive workplace • identify and understand other vehicle systems 	<ul style="list-style-type: none"> • communicate in an automotive workplace • remove and tag steering, suspension and braking system components • remove, inspect and refit light vehicle wheel and tyre assemblies • resolve routine problems

Content Descriptions

All knowledge, understanding and skills below must be delivered:

A Course	M Course
Industry practices, processes and procedures	
<ul style="list-style-type: none"> • analyse and identify practices, processes and procedures and their significance to communicate effectively in an automotive workshop • demonstrate skills in organising work area and equipment in line with workplace standards • analyse and explain wheel and tyre assemblies in order to remove, inspect and refit to workplace standards • demonstrate steering, suspension and brake components removal and tagging to workplace standards 	<ul style="list-style-type: none"> • communicate effectively in an automotive workshop • demonstrate skills in organising work area and equipment in line with workplace standards • wheel and tyre assemblies are removed, inspected and refitted • steering, suspension and brake components are removed and tagged

A Course	M Course
Technical information	
<ul style="list-style-type: none"> • demonstrate removal, inspections and refitting of wheel and tyre assemblies • demonstrate removal and tagging of steering, suspension and brake components • select and use correct tools • apply technical information and specifications to complete a task 	<ul style="list-style-type: none"> • demonstrate removal, inspections and refitting of wheel and tyre assemblies • demonstrate removal and tagging of steering, suspension and brake components • use tools correctly
Workplace, health and safety	
<ul style="list-style-type: none"> • identify and apply basic safety practices and procedures in the workplace • analyse risk hazards, seek appropriate assistance and apply safety strategies • demonstrate knowledge of types and use of personal protective equipment (PPE) • identify environmental and sustainability best practices relating to the automotive workplace 	<ul style="list-style-type: none"> • follow safe work practices including the use of PPE or seek appropriate assistance • identify general workplace sustainability practices
Problem solving	
<ul style="list-style-type: none"> • identify and define problems, analyse different possible solutions and select the best solution identify and define problems, analyse different possible solutions and select the best solution • interact with others in solving problems, proposing solutions and justifying ideas 	<ul style="list-style-type: none"> • identify problems and possible solutions identify and define problems, analyse different possible solutions and select the best solution • interact with others in solving problems
Industry literacy and numeracy	
<ul style="list-style-type: none"> • source and interpret procedures and information from instruction manuals prior to completing work task • apply simple numerical information in workplace procedures, equipment and materials, for example, tyre pressures, tyre sizes • use and communicate basic numerical information that relates to automotive systems and components, for example, steering geometry, toe in/out 	<ul style="list-style-type: none"> • source instruction manuals as required • use and communicate basic numerical information that relates to automotive systems and components

A Course	M Course
Behaviour and attitudes in the workplace	
<ul style="list-style-type: none"> • understand how self-management skills contribute to positive outcomes • demonstrate behaviours and attitudes which contribute positively to learning and work 	<ul style="list-style-type: none"> • demonstrate behaviours and attitudes which contribute positively to learning and work
Reflection on own learning	
<ul style="list-style-type: none"> • reflect on own learning processes and needs within the workplace • analyse and use workplace criteria to self-assess and reflect on whether own work meets standards 	<ul style="list-style-type: none"> • reflect on own learning needs
Communication	
<ul style="list-style-type: none"> • use technical terms correctly in communicating with others verbally and in writing • report inspection findings according to workplace procedures using a range of communication methods • articulate ideas to seek assistance, clarify, offer suggestions or justify approaches • actively listen to guide learning and respond to feedback 	<ul style="list-style-type: none"> • use technical terms • actively listen to guide learning and respond to feedback

A guide to reading and implementing content descriptions

Content descriptions specify the knowledge, understanding and skills that students are expected to learn and that teachers are expected to teach. Teachers are required to develop a program of learning that allows students to demonstrate all the content descriptions. The lens which the teacher uses to demonstrate the content descriptions may be either guided through provision of electives within each unit or determined by the teacher when developing their program of learning.

A program of learning is what a college provides to implement the course for a subject. It is at the discretion of the teacher to emphasis some content descriptions over others. The teacher may teach additional (not listed) content provided it meets the specific unit goals. This will be informed by the student needs and interests.

For colleges wishing to deliver the VET qualification, there is flexibility for a teacher (provided the RTO has scope) to develop a program of learning aligned with the elements of the VET competencies and A/T content descriptions. The knowledge, skills and understandings within the competencies reflect the knowledge, skills and understandings of the BSSS course unit content descriptions.

Alternatively, a college may choose the A/T course without the VET qualification. In delivering the course teachers will write a program of learning aligned with students' needs and interests, meeting the A/T content descriptions.

Units of Competency

Competence must be demonstrated over time and in the full range of automotive contexts. Teachers must use this unit document in conjunction with the Units of Competence from the AUR Automotive Retail, Service and Repair Training Package, which provides performance criteria, range statements and assessment contexts.

Teachers must address **all content** related to the competencies embedded in this unit. Reasonable adjustment may be made only to the mode of delivery, context and support provided according to individual student needs.

Competencies are attached to units and must be delivered in those units. However, ongoing assessment of competencies can occur while the student is enrolled as an ACT Senior Secondary student.

In order to be deemed competent to industry standard, assessment must provide authentic, valid, sufficient and current evidence as indicated in the relevant Training Package.

Certificate I in Automotive Vocational Preparation

The following **core** unit must be delivered and assessed over the semester:

Code	Competency Title
Nil required	

The following **elective** competencies must also be delivered:

Code	Competency Title
AURLTJ113	Remove, inspect and refit light vehicle wheel and tyre assemblies
AURTTA001	Remove and tag steering, suspension and braking system components

Certificate II in in Automotive Vocational Preparation

The following **core** units must be delivered and assessed over the semester:

Code	Competency Title
AURFA103	Communicate effectively in an automotive workplace
AURFA104	Resolve routine problems in an automotive workplace

The following **elective** competency must also be delivered:

Code	Competency Title
Nil required	

All units of competency are optional for students undertaking an M course.

Assessment

Refer to pages 11-12.

Independent Study (for Trade Skills Centres only)

Value: 1.0

Independent Study a

Value 0.5

Independent Study b

Value 0.5

This unit of study is available only for delivery by those Trade Skills/Training Centres with the **Certificate III** units of competence (listed below) on their scope of delivery due to the specialised nature of equipment required to deliver these units of competence. Students study advanced welding techniques, exploring TIG and MIG welding within the automotive industry.

Unit Description

Students build on soldering techniques with a specific focus on soft soldering using correct and appropriate techniques and study advanced welding techniques focusing on Tungsten inert gas welding (TIG) and Gas metal arc welding (MIG) within the automotive industry.

Prerequisites

This unit of study is available only for delivery by those trade skills centres with the Certificate III units of competence (as outlined) on their scope of registration due to the specialised nature of the equipment required to deliver these units of competence.

Students must have studied a minimum of **THREE** standard 1.0 units from this course, including the Fundamentals Unit. A student can only study a maximum of one Independent Study unit in each course. An Independent Study unit requires the principal's written approval. Independent study units are only available to individual students in Year 12. Principal approval is also required for a student in Year 12 to enrol concurrently in an Independent unit and the third 1.0 unit in a course of study.

Due to the complex nature and performance outcomes required to carry out advanced gas metal arc welding (GMAW), it is recommended that students undertake a structured work placement (SWL) to ensure the student is able apply the necessary knowledge and skills required to apply this unit of competency within the workplace.

Specific Unit Goals

This unit should enable students to:

A Course	M Course
<ul style="list-style-type: none"> • carry out soft soldering of vehicle components to repair: <ul style="list-style-type: none"> ○ a radiator or fuel tank using a soldering iron ○ a radiator using a direct flame • carry out a range of welds in a variety of positions to required specifications using gas metal arc welding (MIG) including: <ul style="list-style-type: none"> ○ Butt welds ○ Lap welds ○ Plug welds ○ Butt welds on dissimilar material thicknesses 	<ul style="list-style-type: none"> • carry out soft soldering of vehicle components to repair: <ul style="list-style-type: none"> ○ a radiator or fuel tank using a soldering iron ○ a radiator using a direct flame • carry out a range of welds in a variety of positions to required specifications using gas metal arc welding (MIG) including: <ul style="list-style-type: none"> ○ Butt welds ○ Lap welds ○ Plug welds ○ Butt welds on dissimilar material thicknesses

A Course	M Course
<ul style="list-style-type: none"> • carry out tungsten inert gas (TIG) welding to required material sections, weld positions and specifications • develop workplace skills • identify and follow workplace emergency procedures • select and use appropriate personal protective equipment (PPE) for TIG welding and working with Gas Metal Arc Welding (GMAW) equipment • develop and understand workplace health and safety requirements and procedures 	<ul style="list-style-type: none"> • carry out tungsten inert gas (TIG) welding to required material sections, weld positions and specifications • develop workplace skills • follow safe work practices or seek appropriate assistance • select and use appropriate personal protective equipment for TIG welding and GMAW

Content Descriptions

All knowledge, understanding and skills below must be delivered:

A Course	M Course
Industry practices, processes and procedures	
<ul style="list-style-type: none"> • analyse and identify practices, processes and procedures and their significance to work effectively in an automotive workshop • demonstrate skills in organising work area and equipment in line with workplace standards and safety procedures • apply workplace procedures in technical applications, for example, soft soldering and TIG and MIG welding • demonstrate soft soldering and TIG and MIG welding to workplace standards • evaluate and follow environmental and sustainability processes for the three different types of welding, soft soldering and radiator repairs, including trapping, storage and disposal of waste materials 	<ul style="list-style-type: none"> • follow practices, processes and procedures in an automotive workshop setting and explain their importance • demonstrate skills in organising work area and equipment in line with workplace standards and safety procedures • apply workplace procedures in technical applications, for example, soft soldering and TIG and MIG welding • demonstrate soft soldering and TIG and MIG welding to workplace standards • follow environmental and sustainability processes for the three different types of welding, soft soldering and radiator repairs and explain the reason for them
Technical information	
<ul style="list-style-type: none"> • identify and apply different soft soldering and welding techniques • identify and use specialist soldering and welding equipment • interpret and follow manufacturers' instructions in the use of equipment and materials 	<ul style="list-style-type: none"> • apply different soft soldering and welding techniques • use specialist soldering and welding equipment

A Course	M Course
<ul style="list-style-type: none"> • demonstrate appropriate operating procedures for soft soldering, TIG and MIG welding in line with required specifications and workplace requirements • demonstrate knowledge of testing methods including non-destructive inspection and destructive and apply as appropriate • evaluate and apply weld distortion and distortion control techniques for example, bracing, pre-setting, tacking, bolting, clamping and using jigs and fixtures 	<ul style="list-style-type: none"> • demonstrate appropriate operating procedures for soft soldering, TIG and MIG welding in line with required specifications and workplace requirements • demonstrate knowledge of testing methods
Workplace, health and safety	
<ul style="list-style-type: none"> • identify hazards and risks to own and others' safety, seek assistance and ensure WHS processes are followed • selects and uses personal protective equipment (PPE) • identify and apply safety practices and procedures in the workplace in line with work health and safety requirements in: <ul style="list-style-type: none"> ○ selecting and using PPE for TIG welding and working with Gas Metal Arc Welding (GMAW) equipment, including approved helmets ○ using specialist tools and equipment ○ using protective screens and fume extraction systems ○ manually handling vehicle components and TIG equipment ○ identifying and controlling hazards ○ cleaning and heating equipment ○ in the use of corrosive fluxes ○ volatile liquids and fumes • identify and apply environmental requirements, including trapping, storing and disposing of waste produced 	<ul style="list-style-type: none"> • identify methods of controlling hazards to the environment • selects and uses personal protective equipment (PPE) • follows safety practices and procedures in the workplace or seeks appropriate assistance in: <ul style="list-style-type: none"> ○ selecting and using PPE for TIG welding and working with Gas Metal Arc Welding (GMAW) equipment, including approved helmets ○ using specialist tools and equipment ○ using protective screens and fume extraction systems ○ manually handling vehicle components and TIG equipment ○ identifying and controlling hazards ○ cleaning and heating equipment ○ the use of corrosive fluxes ○ volatile liquids and fumes • identify and apply environmental requirements, including trapping, storing and disposing of waste produced
Problem solving	
<ul style="list-style-type: none"> • identify and define problems such as quality issues in their work product and propose solutions • know when and how to seek support in solving problems 	<ul style="list-style-type: none"> • identify problems and possible solutions • Interact with others in solving problems

A Course	M Course
Industry literacy and numeracy	
<ul style="list-style-type: none"> • demonstrate knowledge and application of numeracy measurement elements required in the work process • apply simple numerical information in workplace procedures, equipment and materials • interpret information and procedures from instruction manuals prior to completing task • locate and interpret appropriate sources of information on work processes for welding and soldering • identify and set gas metal arc welder settings • identify weld measurements from job requirements 	<ul style="list-style-type: none"> • use and communicate basic numerical information that relates to automotive systems, welding and components • use and communicate basic numerical information that relates to automotive systems, welding and components • interpret information from instruction manuals
Behaviour and attitudes in the workplace	
<ul style="list-style-type: none"> • evaluate and prioritise actions for successful work completion • demonstrate skills in organising and cleaning work area and equipment in line with workplace standards • demonstrate self-management skills in contributing to positive outcomes 	<ul style="list-style-type: none"> • demonstrate behaviours and attitudes which contribute positively to learning and work
Reflection on own learning	
<ul style="list-style-type: none"> • reflect on own understandings of processes and learning needs within industry requirements • analyse and use workplace criteria to self-assess and reflect on whether own work meets standards 	<ul style="list-style-type: none"> • reflect on own learning needs
Communication	
<ul style="list-style-type: none"> • communicate accurately in interacting with others to clarify and seek advice • use appropriate and correct terminology when describing technical information 	<ul style="list-style-type: none"> • use technical terms • actively listen to guide learning and respond to feedback

A guide to reading and implementing content descriptions

Content descriptions specify the knowledge, understanding and skills that students are expected to learn and that teachers are expected to teach. Teachers are required to develop a program of learning that allows students to demonstrate all the content descriptions. The lens which the teacher uses to demonstrate the content descriptions may be either guided through provision of electives within each unit or determined by the teacher when developing their program of learning.

A program of learning is what a college provides to implement the course for a subject. It is at the discretion of the teacher to emphasis some content descriptions over others. The teacher may teach additional (not listed) content provided it meets the specific unit goals. This will be informed by the student needs and interests.

For colleges wishing to deliver the VET qualification, there is flexibility for a teacher (provided the RTO has scope) to develop a program of learning aligned with the elements of the VET competencies and A/T content descriptions. The knowledge, skills and understandings within the competencies reflect the knowledge, skills and understandings of the BSSS course unit content descriptions.

Alternatively, a college may choose the A/T course without the VET qualification. In delivering the course teachers will write a program of learning aligned with students' needs and interests, meeting the A/T content descriptions.

Units of Competency

Competence must be demonstrated over time and in the full range of automotive contexts. Teachers must use this unit document in conjunction with the Units of Competence from the AUR Automotive Retail, Service and Repair Training Package, which provides performance criteria, range statements and assessment contexts.

Teachers must address **all content** related to the competencies embedded in this unit. Reasonable adjustment may be made only to the mode of delivery, context and support provided according to individual student needs.

Competencies are attached to units and must be delivered in those units. However, ongoing assessment of competencies can occur while the student is enrolled as an ACT Senior Secondary student.

In order to be deemed competent to industry standard, assessment must provide authentic, valid, sufficient and current evidence as indicated in the relevant Training Package.

Statement of Attainment Certificate III in Automotive Vocational Preparation

The following **core** units must be delivered and assessed over the semester:

Code	Competency Title
Nil required	

The following **elective** competencies must also be delivered:

Code	Competency Title
AURTTW001	Carry out soft soldering techniques
AURVTW103	Carry out advanced gas metal arc welding on vehicle body sections
AURVTW104	Carry out tungsten inert gas welding

All units of competency are optional for students undertaking an M course.

Assessment

Refer to pages 11-12.

Automotive SWL 1

Value: 0.5

Prerequisites

Nil.

Unit Description

This half unit is designed to provide an opportunity for students to undertake an on the job placement with a specialised tradesperson working in industry. Specialisation competencies undertaken at the college level should be considered when arranging suitable host employers. Subsequent placements must ensure students are exposed to a range of experiences and employment environments.

Specific Unit Goals

This unit should enable students to:

- consolidate learning and demonstrate competence in an industry environment
- provide evidence that can contribute to competencies identified for this placement
- develop personal, technical and social skills to enhance their performance as an employee
- work individually and as a team member to achieve organisational goals

Units of Competency

Teachers must use this document in conjunction with the Units of Competence from the AUR Automotive Retail, Service and Repair Training Package which provides performance criteria, range statements and assessment contexts. Competence must be demonstrated over time and in the full range of automotive environments.

In order to be deemed competent to industry standard, assessment must provide authentic, valid, sufficient and current evidence as indicated in the relevant Training Package.

Certificate II in in Automotive Vocational Preparation

The following **core** unit must be delivered and assessed over the semester:

Code	Competency Title
AURASA102	Follow safe working practices in an automotive workplace

The following **elective** competency must also be delivered:

Code	Competency Title
Nil required	

All units of competency are optional for students undertaking an M course.

Assessment

Students need to complete a minimum of 27.5 hours in a Vocational Placement to obtain credit for this unit (0.5).

Assessment of competence on the job must include observation of real work processes and procedures.

Questions related to the performance criteria and directed to the candidate, peers and business client will assist in gathering evidence to assess competence. Evidence can also be collected through supervisor's reports, third party peer and client reports.

Structured Workplace Learning Assessment

Refer to page 55.

Competency Based Assessment

Refer to page 54.

Automotive SWL 2

Value: 0.5

Prerequisites

Nil.

Unit Description

This half unit is designed to provide an opportunity for students to undertake an on the job placement with a specialised tradesperson working in industry. Specialisation competencies undertaken at the college level should be considered when arranging suitable host employers. Subsequent placements must ensure students are exposed to a range of experiences and employment environments.

Specific Unit Goals

This unit should enable students to:

- consolidate learning and demonstrate competence in an industry environment
- provide evidence that can contribute to competencies identified for this placement
- develop personal, technical and social skills to enhance their performance as an employee
- work individually and as a team member to achieve organisational goals

Units of Competency

Teachers must use this document in conjunction with the Units of Competence from the AUR Automotive Retail, Service and Repair Training Package which provides performance criteria, range statements and assessment contexts. Competence must be demonstrated over time and in the full range of automotive environments.

In order to be deemed competent to industry standard, assessment must provide authentic, valid, sufficient and current evidence as indicated in the relevant Training Package.

Certificate II in in Automotive Vocational Preparation

The following **core** unit must be delivered and assessed over the semester:

Code	Competency Title
AURFA103	Communicate effectively in an automotive workplace

The following **elective** competency must also be delivered:

Code	Competency Title
Nil required	

Assessment

Students need to complete a minimum of 27.5 hours in a Vocational Placement to obtain credit for this unit (0.5).

Assessment of competence on the job must include observation of real work processes and procedures.

Questions related to the performance criteria and directed to the candidate, peers and business client will assist in gathering evidence to assess competence. Evidence can also be collected through supervisor's reports, third party peer and client reports.

Structured Workplace Learning Assessment

Refer to page 55.

Competency Based Assessment

Refer to page 54.

Appendix A – Implementation Guidelines

Available course patterns

A standard 1.0 value unit is delivered over at least 55 hours. To be awarded a course, students must complete at least the minimum units over the whole minor, major, major/minor or double major course.

Course	Number of standard units to meet course requirements
Minor	Minimum of 2 units
Major	Minimum of 3.5 units

Units in this course can be delivered in any order.

Prerequisites for the course or units within the course

For the Independent Study unit (Trade Skills Centres only), students must have studied a minimum of **THREE** standard 1.0 units from this course, including the Fundamentals Unit. An independent study unit requires the principal's written approval and is only available to individual students in Year 12.

Arrangements for students continuing study in this course

Students who studied the previous course may undertake any units in this course provided there is no duplication of content.

Duplication of Content Rules

Students cannot be given credit towards the requirements for a Senior Secondary Certificate for a unit that significantly duplicates content in a unit studied in another course. The responsibility for preventing undesirable overlap of content studied by a student rests with the principal and the teacher delivering the course. While it is acceptable for a student to be given the opportunity to demonstrate competence in VET qualifications over more than one semester, substantial overlap of content is not permitted. Students will only be given credit for covering the content once.

Relationship to other courses

This course does not share any common competencies with other BSSS accredited courses.

New and/or updated Training Package

Training Packages are regularly updated through the mandatory continuous improvement cycle. This may result in updating of qualifications and a change in the composition of competencies within a qualification. Where qualifications from the new Training Package have been deemed to be equivalent, students may continue their study without interruption. Students will be granted direct credit for those competencies already achieved.

Where there are new competencies or updated competencies with significant change and these are deemed not equivalent, students may apply for Recognition of Prior Learning (RPL) for all or part of competencies.

Granting of RPL for competencies does not equate to points towards the Senior Secondary Certificate.

Recognition of Prior Learning (RPL)

RPL is an assessment process that assesses an individual's formal, non-formal and informal learning to determine the extent to which that individual has achieved the required learning outcomes, competence outcomes, or standards for entry to, and/or partial or total completion of, a VET qualification.

Recognition of competence through the RPL process should be granted to students through gathering supplementary evidence against elements, skills and knowledge from the Training Package as well as through established assessment criteria. RPL may be granted for individual Units of Competence where the evidence is sufficient to do so.

A student having been granted RPL for one or more Units of Competence will still be required to fulfill the time based component of units that contributes to points and A to E grading for the Senior Secondary Certificate.

To cater for this requirement, curriculum designers should design the course to be flexible enough to accommodate students who have gained some competencies through RPL.

Students may demonstrate the achievement of learning outcomes through challenge testing, interview or other means that the teacher deems reasonable. Full records of the RPL process and results must be stored by the college for perusal by the National VET Regulator upon request and should confirmation be required for VET certification. The college must be informed of the application of RPL before the start of the unit that includes the competency. For RPL to be awarded, the Units of Competency must be demonstrated in the Industry context.

Guidelines for Delivery

Program of Learning

A program of learning is what a school provides to implement the course for a subject. This meets the requirements for context, scope and sequence set out in the Board endorsed course. Students follow programs of learning in a college as part of their senior secondary studies. The detail, design and layout of a program of learning are a college decision.

The program of learning must be documented to show the planned learning activities and experiences that meet the needs of particular groups of students, taking into account their interests, prior knowledge, abilities and backgrounds. The program of learning is a record of the learning experiences that enable students to achieve the knowledge, understanding and skills of the content descriptions. There is no requirement to submit a program of learning to the OBSSS for approval. The Principal will need to sign off at the end of Year 12 that courses have been delivered as accredited.

Content Descriptions

Are all content descriptions of equal importance? No. It depends on the focus of study. Teachers can customise their program of learning to meet their own students' needs, adding additional content descriptions if desired or emphasising some over others. A teacher must balance student needs with their responsibility to teach all content descriptions. It is mandatory that teachers address all content descriptions and that students engage with all content descriptions.

Half standard 0.5 units

Half standard units appear on the course adoption form but are not explicitly documented in courses. It is at the discretion of the college principal to split a standard 1.0 unit into two half standard 0.5 units. Colleges are required to adopt the half standard 0.5 units. However, colleges are not required to submit explicit documentation outlining their half standard 0.5 units to the BSSS. Colleges must assess students using the half standard 0.5 assessment task weightings outlined in the framework. It is the responsibility of the college principal to ensure that all content is delivered in units approved by the Board.

Reasonable Adjustment

Units in this course are suitable for students requiring reasonable adjustment for delivery and assessment. However, standards of competency (outcomes) as dictated by National Training Packages **cannot be modified**. Students must demonstrate competence to the level required by industry in order to gain a Statement of Attainment or Vocational Certificate.

Moderation

Moderation is a system designed and implemented to:

- provide comparability in the system of school-based assessment
- form the basis for valid and reliable assessment in senior secondary schools
- involve the ACT Board of Senior Secondary Studies and colleges in cooperation and partnership
- maintain the quality of school-based assessment and the credibility, validity and acceptability of Board certificates.

Moderation commences within individual colleges. Teachers develop assessment programs and instruments, apply assessment criteria, and allocate Unit Grades, according to the relevant Framework. Teachers within course teaching groups conduct consensus discussions to moderate marking or grading of individual assessment instruments and Unit Grade decisions.

The Moderation Model

Moderation within the ACT encompasses structured, consensus-based peer review of Unit Grades for all accredited courses over two Moderation Days. In addition to Moderation Days, there is statistical moderation of course scores, including small group procedures, for T courses.

Moderation by Structured, Consensus-based Peer Review

Consensus-based peer review involves the review of student work against system wide criteria and standards and the validation of Unit Grades. This is done by matching student performance with the criteria and standards outlined in the Achievement Standards, as stated in the Framework. Advice is then given to colleges to assist teachers with, or confirm, their judgments. In addition, feedback is given on the construction of assessment instruments.

Preparation for Structured, Consensus-based Peer Review

Each year, teachers of Year 11 are asked to retain originals or copies of student work completed in Semester 2. Similarly, teachers of a Year 12 class should retain originals or copies of student work completed in Semester 1. Assessment and other documentation required by the Office of the Board of Senior Secondary Studies should also be kept. Year 11 work from Semester 2 of the previous year is presented for review at Moderation Day 1 in March, and Year 12 work from Semester 1 is presented for review at Moderation Day 2 in August.

In the lead up to Moderation Day, a College Course Presentation (comprised of a document folder and a set of student portfolios) is prepared for each A, T and M course/units offered by the school and is sent into the Office of the Board of Senior Secondary Studies.

The College Course Presentation

The package of materials (College Course Presentation) presented by a college for review on Moderation Days in each course area will comprise the following:

- a folder containing supporting documentation as requested by the Office of the Board through memoranda to colleges, including marking schemes and rubrics for each assessment item
- a set of student portfolios containing marked and/or graded written and non-written assessment responses and completed criteria and standards feedback forms. Evidence of all assessment responses on which the Unit Grade decision has been made is to be included in the student review portfolios.

Specific requirements for subject areas and types of evidence to be presented for each Moderation Day will be outlined by the Board Secretariat through the *Requirements for Moderation Memoranda* and Information Papers.

Visual evidence for judgements made about practical performances

It is a requirement that schools' judgements of standards to practical performances (A/T/M) be supported by visual evidence (still photos or video).

The photographic evidence submitted must be drawn from practical skills performed as part of the assessment process.

Teachers should consult the BSSS website for current information regarding all moderation requirements including subject specific and photographic evidence.

Appendix B – Course Developers

Name	College
Ray Redman	Canberra College
Matthew Pooley	Daramalan College
Rob Harriden	Hawker College
Joe Willmot	UCSSC, Lake Ginninderra

Appendix C – Common Curriculum Elements

Common curriculum elements assist in the development of high-quality assessment tasks by encouraging breadth and depth and discrimination in levels of achievement.

Organisers	Elements	Examples
create, compose and apply	apply	ideas and procedures in unfamiliar situations, content and processes in non-routine settings
	compose	oral, written and multimodal texts, music, visual images, responses to complex topics, new outcomes
	represent	images, symbols or signs
	create	creative thinking to identify areas for change, growth and innovation, recognise opportunities, experiment to achieve innovative solutions, construct objects, imagine alternatives
	manipulate	images, text, data, points of view
analyse, synthesise and evaluate	justify	arguments, points of view, phenomena, choices
	hypothesise	statement/theory that can be tested by data
	extrapolate	trends, cause/effect, impact of a decision
	predict	data, trends, inferences
	evaluate	text, images, points of view, solutions, phenomenon, graphics
	test	validity of assumptions, ideas, procedures, strategies
	argue	trends, cause/effect, strengths and weaknesses
	reflect	on strengths and weaknesses
	synthesise	data and knowledge, points of view from several sources
	analyse	text, images, graphs, data, points of view
	examine	data, visual images, arguments, points of view
investigate	issues, problems	
organise, sequence and explain	sequence	text, data, relationships, arguments, patterns
	visualise	trends, futures, patterns, cause and effect
	compare/contrast	data, visual images, arguments, points of view
	discuss	issues, data, relationships, choices/options
	interpret	symbols, text, images, graphs
	explain	explicit/implicit assumptions, bias, themes/arguments, cause/effect, strengths/weaknesses
	translate	data, visual images, arguments, points of view
	assess	probabilities, choices/options
	select	main points, words, ideas in text
identify, summarise and plan	reproduce	information, data, words, images, graphics
	respond	data, visual images, arguments, points of view
	relate	events, processes, situations
	demonstrate	probabilities, choices/options
	describe	data, visual images, arguments, points of view
	plan	strategies, ideas in text, arguments
	classify	information, data, words, images
	identify	spatial relationships, patterns, interrelationships
	summarise	main points, words, ideas in text, review, draft and edit

Appendix D – Glossary of Verbs

Verbs	Definition
Analyse	Consider in detail for the purpose of finding meaning or relationships, and identifying patterns, similarities and differences
Apply	Use, utilise or employ in a particular situation
Argue	Give reasons for or against something
Assess	Make a Judgement about the value of
Classify	Arrange into named categories in order to sort, group or identify
Compare	Estimate, measure or note how things are similar or dissimilar
Compose	The activity that occurs when students produce written, spoken, or visual texts
Contrast	Compare in such a way as to emphasise differences
Create	Bring into existence, to originate
Demonstrate	Give a practical exhibition an explanation
Describe	Give an account of characteristics or features
Discuss	Talk or write about a topic, taking into account different issues or ideas
Evaluate	Examine and judge the merit or significance of something
Examine	Determine the nature or condition of
Explain	Provide additional information that demonstrates understanding of reasoning and /or application
Extrapolate	Infer from what is known
Hypothesise	Put forward a supposition or conjecture to account for certain facts and used as a basis for further investigation by which it may be proved or disproved
Identify	Recognise and name
Interpret	Draw meaning from
Investigate	Planning, inquiry into and drawing conclusions about
Justify	Show how argument or conclusion is right or reasonable
Manipulate	Adapt or change
Plan	Strategize, develop a series of steps, processes
Predict	Suggest what might happen in the future or as a consequence of something
Reflect	The thought process by which students develop an understanding and appreciation of their own learning. This process draws on both cognitive and affective experience
Relate	Tell or report about happenings, events or circumstances
Represent	Use words, images, symbols or signs to convey meaning
Reproduce	Copy or make close imitation
Respond	React to a person or text
Select	Choose in preference to another or others
Sequence	Arrange in order
Summarise	Give a brief statement of the main points
Synthesise	Combine elements (information/ideas/components) into a coherent whole
Test	Examine qualities or abilities
Translate	Express in another language or form, or in simpler terms
Visualise	The ability to decode, interpret, create, question, challenge and evaluate texts that communicate with visual images as well as, or rather than, words

Appendix E – Glossary for ACT Senior Secondary Curriculum

Courses will detail what teachers are expected to teach and students are expected to learn for year 11 and 12. They will describe the knowledge, understanding and skills that students will be expected to develop for each learning area across the years of schooling.

Learning areas are broad areas of the curriculum, including English, mathematics, science, the arts, languages, health and physical education.

A **subject** is a discrete area of study that is part of a learning area. There may be one or more subjects in a single learning area.

Frameworks are system documents for Years 11 and 12 which provide the basis for the development and accreditation of any course within a designated learning area. In addition, frameworks provide a common basis for assessment, moderation and reporting of student outcomes in courses based on the framework.

The **course** sets out the requirements for the implementation of a subject. Key elements of a course include the rationale, goals, content descriptions, assessment, and achievement standards as designated by the framework.

BSSS courses will be organised into units. A unit is a distinct focus of study within a course. A standard 1.0 unit is delivered for a minimum of 55 hours generally over one semester.

Core units are foundational units that provide students with the breadth of the subject.

Additional units are avenues of learning that cannot be provided for within the four core 1.0 standard units by an adjustment to the program of learning.

An **Independent Study unit** is a pedagogical approach that empowers students to make decisions about their own learning. Independent Study units can be proposed by a student and negotiated with their teacher but must meet the specific unit goals and content descriptions as they appear in the course.

An **elective** is a lens for demonstrating the content descriptions within a standard 1.0 or half standard 0.5 unit.

A **lens** is a particular focus or viewpoint within a broader study.

Content descriptions refer to the subject-based knowledge, understanding and skills to be taught and learned.

A **program of learning** is what a college develops to implement the course for a subject and to ensure that the content descriptions are taught and learned.

Achievement standards provide an indication of typical performance at five different levels (corresponding to grades A to E) following completion of study of senior secondary course content for units in a subject.

ACT senior secondary system **curriculum** comprises all BSSS approved courses of study.

Appendix F – Implementation of VET Qualifications

Training Package Code and Title

AUR Automotive Retail, Service and Repair Training Package Release 6.0

VET Qualifications

For the **AUR10120 Certificate I in Automotive Vocational Preparation** the following packaging rules apply:

Total number of units = 8

5 core units, plus

3 elective units, of which:

- all 3 units may be from the elective units listed below
- up to 2 units may be from a Certificate I qualification or above in this Training Package or another endorsed Training Package or accredited course.

Elective units chosen must be relevant to the work environment and the qualification, maintain the overall integrity of the AQF alignment, not duplicate the outcome of another unit chosen for the qualification, and contribute to a valid vocational outcome.

A Structured Workplace Learning (SWL) placement can be a valuable additional opportunity.

This course, with listed competencies, meets these requirements at time of development.

Colleges are advised to check current training package requirements before delivery.

If the full requirements of a Certificate are not met, students will be awarded a Statement of Attainment listing Units of Competence achieved according to Standard 3 of the Standards for Registered Training Organisations (RTOs) 2015.

Competencies for Certificate I in Automotive Vocational Preparation

Code	Competency Title	Core/Elective
AURAEA001	Identify environmental and sustainability requirements in an automotive service or repair workplace	Core
AURASA001	Apply automotive workplace safety fundamentals	Core
AURETR103	Identify automotive electrical systems and components	Core
AURLTA101	Identify automotive mechanical systems and components	Core
AURLTA102	Use and maintain tools and equipment in an automotive workplace	Core
AURETK001	Identify, select and use low voltage electrical test equipment	Elective
AURETR006	Solder electrical wiring and circuits	Elective
AURLTJ113	Remove, inspect and refit light vehicle wheel and tyre assemblies	Elective
AURPTA102	Carry out minor adjustments to outdoor power equipment	Elective
AURTTA001	Remove and tag steering, suspension and braking system components	Elective
AURTTE003	Remove and tag engine system components	Elective

For the **AUR20720 Certificate II in Automotive Vocational Preparation** the following packaging rules apply:

Total number of units = 12

7 core units, plus

5 elective units, of which:

- all 5 units may be from the elective units listed below
- up to 2 units may be from a Certificate I or Certificate II qualification in this Training Package or another endorsed Training Package or accredited course.

Elective units chosen must be relevant to the work environment and the qualification, maintain the overall integrity of the AQF alignment, not duplicate the outcome of another unit chosen for the qualification, and contribute to a valid vocational outcome.

A Structured Workplace Learning (SWL) placement can be a valuable additional opportunity.

This course, with listed competencies, meets these requirements at time of development.

Colleges are advised to check current training package requirements before delivery.

If the full requirements of a Certificate are not met, students will be awarded a Statement of Attainment listing Units of Competence achieved according to Standard 3 of the Standards for Registered Training Organisations (RTOs) 2015.

Competencies for Certificate II in Automotive Vocational Preparation

Code	Competency Title	Core/Elective
AURAEA002	Follow environmental and sustainability best practice in an automotive workplace	Core
AURAF104	Resolve routine problems in an automotive workplace	Core
AURASA102	Follow safe working practices in an automotive workplace	Core
AURAF103	Communicate effectively in an automotive workplace	Core

Statement of Attainment AUR30620 Certificate III in Light Vehicle Mechanical Technology

In order to gain a Statement of Attainment for AUR30620 Certificate III in Light Vehicle Mechanical Technology, the college/school RTO needs to have the following competencies listed on their scope of registration. Students will be awarded a Statement of Attainment listing the Units of Competence achieved according to Standard 3 of the Standards for Registered Training Organisations (RTOs) 2015.

Note: this unit of study is available only for delivery by those Trade Skills Centres with the **Certificate III** units of competence (as outlined) on their scope of registration due to the specialised nature of the equipment required to deliver these units of competence.

If the full requirements of a Certificate are not met, students will be awarded a Statement of Attainment listing Units of Competence achieved according to Standard 3 of the Standards for Registered Training Organisations (RTOs) 2015.

Code	Competency Title	Elective
AURTTW001	Carry out soft soldering techniques	Elective
AURVTW103	Carry out advanced gas metal arc welding on vehicle body sections	Elective
AURVTW104	Carry out tungsten inert gas welding	Elective

VET Competencies Mapped to Course Units

Grouping of competencies within units may not be changed by individual colleges.

Competencies designated at the Certificate III level can only be delivered by schools that have scope to do so. Colleges must apply to have additional competencies at a higher level listed on their scope of registration.

Note: When selecting units, colleges must ensure that they follow packaging rules and meet the requirements for the Certificate level. In the event that full Certificate requirements are not met a Statement of Attainment will be issued.

All core competencies must be delivered in the relevant unit. The elective competencies delivered are dependent on the elective units chosen.

VET Implementation Summary

AUR10120 Certificate I in Automotive Vocational Preparation

BSSS Unit Title		Competencies			
Fundamentals	1.0	Core code	Core title		
		AURASA001	Apply automotive workplace safety fundamentals		
		AURLTA101	Identify automotive mechanical systems and components		
		AURLTA102	Use and maintain tools and equipment in an automotive workplace		
		Elective code	Elective title		
		AURPTA102	Carry out minor adjustments to outdoor power equipment		
Electrical Systems	1.0	Core code	Core title		
		AURAEA001	Identify environmental and sustainability requirements in an automotive service or repair workplace		
		AURETR103	Identify automotive electrical systems and components		
		Elective code	Elective title		
				AURETR006 AURETK001	Solder electrical wiring and circuits Identify, select and use low voltage electrical test equipment
Engine Systems	1.0	Elective code	Elective title		
				AURTTE003	Remove and tag engine system components
Vehicle Systems	1.0	Elective code	Elective title		
				AURLTJ113	Remove, inspect and refit light vehicle wheel and tyre assemblies
				AURTTA001	Remove and tag steering, suspension and braking system components

AUR20720 Certificate II in Automotive Vocational Preparation

BSSS Unit Title		Competencies	
Engine Systems	1.0	Core code	Core title
		AURAEA002	Follow environmental and sustainability best practice in an automotive workplace
		AURASA102	Follow safe working practices in an automotive workplace
Vehicle Systems	1.0	Core code	Core title
		AURAF103	Communicate effectively in an automotive workplace
		AURAF104	Resolve routine problems in an automotive workplace
Automotive SWL 1	0.5	Core code	Core title
		AURASA102	Follow safe work practices in an automotive environment
Automotive SWL 2	0.5	Core code	Core title
		AURAF103	Communicate effectively in an automotive workplace

AUR30620 Certificate III in Light Vehicle Mechanical Technology

BSSS Unit Title		Competencies	
Independent Study	1.0	Elective code	Elective title
		(Trade Skills Centres only)	
		Note: this unit of study is available only for delivery by those Trade Skills Centres with the Certificate III units of competence (as outlined) on their scope of registration due to the specialised nature of the equipment required to deliver these units of competence.	
		AURTTW001	Carry out soft soldering techniques
		AURVTW103	Carry out advanced gas metal arc welding on vehicle body sections
		AURVTW104	Carry out tungsten inert gas welding

Competency Based Assessment

The assessment of competence must focus on the competency standards and the associated elements as identified in the Training Package. Assessors must develop assessment strategies that enable them to obtain sufficient evidence to deem students competent. This evidence must be gathered over a number of assessment items. Competence to industry standard requires a student to be able to demonstrate the relevant skills and knowledge in a variety of industry contexts on repeated occasions. Assessment must be designed to collect evidence against the four dimensions of competency.

- **Task skills** – undertaking specific workplace task(s)
- **Task management skills** – managing a number of different tasks to complete a whole work activity
- **Contingency management skills** – responding to problems and irregularities when undertaking a work activity, such as: breakdowns, changes in routine, unexpected or atypical results, difficult or dissatisfied clients
- **Job/role environment skills** – dealing with the responsibilities and expectations of the work environment when undertaking a work activity, such as: working with others, interacting with clients and suppliers, complying with standard operating procedures or observing enterprise policy and procedures.

The most appropriate method of assessing workplace competence is on-the-job in an industry setting under normal working conditions. This includes using industry standard tools, equipment and job aids and working with trade colleagues. Where this is not available, a simulated workplace environment that mirrors the industry setting will be used. The following general principles and strategies apply:

- assessment is competency based
- assessment is criterion-referenced.

Quality outcomes can only be assured through the assessment process. The strategy for assessment is based on an integration of the workplace competencies for the learning modules into a holistic activity. The awarding of vocational qualifications is dependent on successful demonstration of the learning outcomes within the modules through the integrated competency assessment that meets the Training Package rules and requirements.

The integrated assessment activity will require the learner to:

- use the appropriate key competencies
- apply the skills and knowledge which underpin the process required to demonstrate competency in the workplace
- integrate the most critical aspects of the competencies for which workplace competency must be demonstrated
- provide evidence for grades and or scores for the Board course component of the assessment process.

Structured Workplace Learning (SWL): Assessment

Structured Workplace Learning is the workplace component of a nationally recognised industry specific VET in Schools program. It provides supervised learning activities contributing to an assessment of competence, and achievement of outcomes and requirements of a particular Training Package. (Please refer to BSSS Policies and Procedures Manual for Board policy on SWL).

Students must be able to demonstrate identified competencies in SWL units with direct reference to elements of competence and required skills and knowledge from the relevant Training Package. Assessment of SWL units is competency based and reliant on the gathering of sufficient evidence from a student's work placement. Students need to complete a minimum of 27.5 hours to obtain credit for an SWL. Students will be awarded a grade Pass or Participated in the SWL unit (refer section 4.3.6.3 Unit Grades – BSSS Policies and Procedures Manual).

Standards for Registered Training Organisations 2015

These Standards form part of the VET Quality Framework, a system which ensures the integrity of nationally recognised qualifications.

RTOs are required to comply with these Standards and with the:

- National Vocational Education and Training Regulator Act 2011
- VET Quality Framework.

The purpose of these Standards is to:

- set out the requirements that an organisation must meet in order to be an RTO
- ensure that training products delivered by RTOs meet the requirements of training packages or VET accredited courses, and have integrity for employment and further study
- ensure RTOs operate ethically with due consideration of learners' and enterprises' needs.

To access the standards, refer to:

<https://www.legislation.gov.au/Details/F2017C00663>

To access The Users' Guide to the Standards refer to:

<https://www.asqa.gov.au/standards>

Guidelines for Colleges Seeking Scope

Colleges must apply to have their scope of registration extended for each new qualification they seek to issue. There is no system-level process. Each college must demonstrate capacity to fulfil the requirements outlined in the Training Package. Applications for extension of scope are lodged through the Australian Skills Quality Authority (ASQA).

Assessment of Certificate III Units of Competence

Colleges delivering any Units of Competence from Certificate III (apart from those competencies allowed in training package rules) will need to have them listed on their scope **or** negotiate a Third Party Agreement with a scoped training partner. This document must be kept on record by the college as the RTO.

Appendix G – Course Adoption

Condition of Adoption

The course and units of this course are consistent with the philosophy and goals of the college and the adopting college has the human and physical resources to implement the course.

Adoption Process

Course adoption must be initiated electronically by an email to bssscertification@ed.act.edu.au by the principal or their nominated delegate.

The email will include the **Conditions of Adoption** statement above, and the table below adding the **College** name, and **A** and/or **T** and/or **M** and/or **V** to the **Classification/s** section of the table.

College:				
Course Title:	Automotive Technology			
Classification/s:	A	M	V	
Framework:	Industry and Services Framework 2017			
Dates of Course Accreditation:	from	2018	to	2022