Level 4 Diploma in Advanced Vehicle Diagnostics and Management Principles (4122-14)

June 2020 Version 1.2

**City&
Guilds**

Qualification at a glance

Subject area	**Advanced Vehicle Diagnostics and Management Principles**
City & Guilds number	4122
Age group approved	18+, 19+
Entry requirements	N/a
Assessment	Assignment
Fast track	Not available
Support materials	Centre handbook Assessment pack Answer pack
Registration and certification	Consult the Walled Garden/Online Catalogue for last dates

Title and level	GLH	TQT	City & Guilds number	Accreditation number
Level 4 Diploma in Advanced Vehicle Diagnostics and Management Principles	530	700	4122-14	601/1221/9

Version and date	Change detail	Section
1.2 June 2020	TQT added	**Qualification at a glance**

Contents

City & Guilds Level 4 Diploma in Advanced Vehicle Diagnostics and Management Principles (4122-14)

1   Introduction

This document tells you what you need to do to deliver the qualification:

Area	Description
Who is the qualification for?	For candidates who are progressing from Level 3 and would like to develop the knowledge and skills to diagnose and repair complex vehicle faults by using advanced vehicle technology. Learners will learn how to liaise with a diverse range of audiences to decide and explain the best outcome for each specific repair job. It also gives the opportunity to learn how to develop others and share best practice. Job roles this qualification may lead to are master/senior technician and workshop controller.
What does the qualification cover?	The Level 4 enables learners to enhance their logical thinking skills. Learners completing a level 3 qualification in Vehicle Maintenance and Repair will already have some knowledge of diagnosing and fixing faults. However, higher level advanced diagnostic skills require technical skills. These skills only come from higher level fault finding independent experience and professional discussion with Master Technicians plus self learning.
What opportunities for progression are there?	It allows learners to progress into employment or to the following qualifications: • Level 5 Higher Apprenticeship in Automotive Leadership and Management • Foundation Degree in Automotive Engineering or Automotive Technology.

Structure

To achieve the Level 4 Diploma in Advanced Vehicle Diagnostics and Management Principles, learners must achieve **61** credits from the mandatory units and a minimum of **9** credits from the optional units available.

Unit accreditation number	City & Guilds unit number	Unit title	Credit value	Unit Level
Mandatory				
Y/601/6282	Unit 304	Skills in how to make learning possible through demonstrations and instruction	5	3
J/601/6262	Unit 305	Skills in supporting job roles in the automotive work environment	5	3
M/601/6286	Unit 306	Skills to identify and agree motor vehicle customer service needs	5	3
T/502/6484	Unit 353	Knowledge in monitoring procedures to control risk to health and safety	5	3
T/601/6242	Unit 354	Knowledge of how to make learning possible through demonstrations and instruction	5	3
T/601/6175	Unit 355	Knowledge of support for job roles in the automotive work environment	3	3
R/601/6247	Unit 356	Knowledge of how to identify and agree motor vehicle customer service needs	5	3
L/502/6457	Unit 403	Knowledge of providing diagnostic equipment and technical information system support in motor vehicle environments	2	4
M/502/6449	Unit 405	Knowledge of providing technical support and advice to colleagues in motor vehicle environments	5	4
M/502/6452	Unit 406	Knowledge in conducting diagnostic consultations with customers in motor vehicle environments	4	4

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Unit accreditation number	City & Guilds unit number	Unit title	Credit value	Unit Level
H/502/6450	Unit 411	Skills in providing technical support and advice to colleagues in motor vehicle environments	3	4
R/502/6458	Unit 412	Skills in providing diagnostic equipment and technical information system support in motor vehicle environments	3	4
Y/502/6459	Unit 413	Skills in liaising with vehicle product manufacturers and suppliers on technical matters	3	4
K/502/6451	Unit 415	Skills in conducting diagnostic consultations with customers in motor vehicle environments	3	4
F/502/6455	Unit 416	Knowledge of liaising with vehicle product manufacturers and suppliers on technical matters	5	4
Optional				
Y/502/6445	Unit 401	Knowledge of diagnosing motor vehicle faults where no prescribed process or format is available in motor vehicle environments	5	4
H/502/6447	Unit 414	Skills in diagnosing motor vehicle faults where no prescribed process or format is available in motor vehicle environments	4	4
T/504/1129	Unit 417	Project management	15	4

2   Centre requirements

Approval

There is no fast track approval for this qualification; existing centres who wish to offer this qualification must use the **standard** Qualification Approval Process.

To offer this qualification, new centres will need to gain both centre and qualification approval. Please refer to the *Centre Manual - Supporting Customer Excellence* for further information.

Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualification before designing a course programme.

Resource requirements

Physical resources and site agreements

Centres must have access to sufficient equipment in the college, training centre or workplace to ensure candidates have the opportunity to cover all of the practical activities.

Centre staffing

Staff delivering this qualification must be able to demonstrate that they meet the following occupational expertise requirements. They should:

- be occupationally competent or technically knowledgeable in the area for which they are delivering training and/or have experience of providing training. This knowledge must be to the same level as the training being delivered
- have recent relevant experience in the specific area they will be assessing
- have credible experience of providing training.

Centre staff may undertake more than one role, eg tutor and assessor or internal quality assurer, but cannot internally verify their own assessments.

Assessors and Internal Quality Assurer

While the Assessor/Verifier (A/V) units are valued as qualifications for centre staff, they are not currently a requirement for this qualification.

Continuing Professional Development (CPD)

Centres must support their staff to ensure that they have current knowledge of the occupational area, that delivery, mentoring, training, assessment and verification is in line with best practice, and that it takes account of any national or legislative developments.

Learner entry requirements

City & Guilds does not set entry requirements for this qualification. However, centres must ensure that learners have the potential and opportunity to gain the qualification successfully.

Age restrictions

City & Guilds cannot accept any registrations for learners under 18 as this qualification is not approved for under 18s.

3 Delivering the qualification

Initial assessment and induction

An initial assessment of each learner should be made before the start of their programme to identify:

- if the learner has any specific training needs
- support and guidance they may need when working towards their qualification
- any units they have already completed, or credit they have accumulated which is relevant to the qualification
- the appropriate type and level of qualification.

We recommend that centres provide an induction programme so the learner fully understands the requirements of the qualification, their responsibilities as a learner, and the responsibilities of the centre. This information can be recorded on a learning contract.

Recording documents

Candidates and centres may decide to use a paper-based or electronic method of recording evidence.

City & Guilds endorses several ePortfolio systems, including our own, **Learning Assistant**, an easy-to-use and secure online tool to support and evidence learners' progress towards achieving qualifications. Further details are available at: **www.cityandguilds.com/eportfolios**.

City & Guilds has developed a set of tracking sheets specifically for this qualification. They are available from the City & Guilds website or can be ordered from Publications.

Although new centres are expected to use these forms, centres may devise or customise alternative forms, which must be approved for use by the qualification consultant, before they are used by candidates and assessors at the centre.

4   Assessment

City & Guilds has written the following assessments to use with this qualification:

- assignments, including knowledge questions
- tracking sheets to produce a portfolio of evidence.

Unit	Title	Assessment method
304	Skills in how to make learning possible through demonstrations and instruction	Portfolio
305	Skills in supporting job roles in the automotive work environment	Portfolio
306	Skills to identify and agree motor vehicle customer service needs	Portfolio
353	Knowledge in monitoring procedures to control risk to health and safety	Assignment
354	Knowledge of how to make learning possible through demonstrations and instruction	Assignment
355	Knowledge of support for job roles in the automotive work environment	Assignment
356	Knowledge of how to identify and agree motor vehicle customer service needs	Assignment
401	Knowledge of diagnosing motor vehicle faults where no prescribed process or format is available in motor vehicle environments	Assignment
403	Knowledge of providing diagnostic equipment and technical information system support in motor vehicle environments	Assignment
405	Knowledge of providing technical support and advice to colleagues in motor vehicle environments	Assignment
406	Knowledge in conducting diagnostic consultations with customers in motor vehicle environments	Assignment
411	Skills in providing technical support and advice to colleagues in motor vehicle environments	Portfolio

Unit	Title	Assessment method
412	Skills in providing diagnostic equipment and technical information system support in motor vehicle environments	Portfolio
413	Skills in liaising with vehicle product manufacturers and suppliers on technical matters	Portfolio
414	Skills in diagnosing motor vehicle faults where no prescribed process or format is available in motor vehicle environments	Portfolio
415	Skills in conducting diagnostic consultations with customers in motor vehicle environments	Portfolio
416	Knowledge of liaising with vehicle product manufacturers and suppliers on technical matters	Assignment
417	Project management	Assignment

Assessment strategy

Full details of the assessment requirements and the assessment strategy relating to these qualifications can be obtained directly from the Institute of the Motor Industry (IMI) **http://www.motor.org.uk**

Grading

The knowledge units – 353, 401, 403, 405, 406, 416, and 417 will be graded Pass, Merit or Distinction.

5   Units

Availability of units

Structure of units

These units each have the following:

- City & Guilds reference number
- Unit Accreditation Number (UAN)
- title
- level
- credit value
- guided learning hours
- unit aim
- relationship to NOS, other qualifications and frameworks
- endorsement by a sector or other appropriate body
- learning outcomes which are comprised of a number of assessment criteria.

Unit 304   Skills in how to make learning possible through demonstrations and instruction

UAN:	**Y/601/6282**
Level:	3
Credit value:	5
GLH:	40
Relationship to NOS:	This unit is linked to G6 Enable Learning through Demonstration and Instruction.
Assessment requirements specified by a sector or regulatory body:	This unit was developed by the IMI, the sector skills council for the automotive retail industry. All assessments have been developed in accordance with the IMI Assessment Requirements for VRQs.
Aim:	This unit covers the skills needed in order to carry out demonstrations and instruction which will help the learner to learn. It includes demonstrating equipment, showing skills, giving instruction, deciding when to use demonstration or instruction, potential of technology based learning, checking on learners' progress and giving feedback.

Learning outcome
The learner will:
1. Be able to demonstrate skills and methods to learners.
Assessment criteria
The learner can:
1.1   perform demonstrations based on an analysis of the skills needed and the order in which they must be learned
1.2   perform demonstrations that are accurate and realistic
1.3   perform structured demonstrations so that the learner can get the most out of it
1.4   perform demonstrations whilst encouraging learners to ask questions and get explanation at appropriate stages in the demonstration
1.5   provide positive feedback to learners whilst they are being given the opportunity to practise the skills that have been demonstrated
1.6   perform additional demonstrations of skills being taught to reinforce learning
1.7   perform demonstrations in a safe environment which also allows learners to see clearly
1.8   respond to the needs of the learners during demonstrations
1.9   reduce distractions and disruptions as much as possible.

Learning outcome
The learner will:
2. Be able to instruct learners.
Assessment criteria
The learner can:
2.1   implement instruction which is matched to the needs of learners
2.2   use identified learning outcomes which can be achieved through instruction
2.3   perform instruction, ensuring that the manner, level and speed of the instruction encourages learners to take part
2.4   perform instruction whilst regularly checking that the learners understand and adapt instruction as appropriate
2.5   give learners positive feedback on the learning experience and the outcomes achieved
2.6   carry out a review with the learners to identify anything that prevented learning and adapt instruction as appropriate.

Unit 304   Skills in how to make learning possible through demonstrations and instruction

Supporting information

Assessment requirements

The assessment requirements are shown in full in the assessment documentation.

Unit 305 Skills in supporting job roles in the automotive work environment

UAN:	**J/601/6262**
Level:	3
Credit value:	5
GLH:	40
Relationship to NOS:	This unit is linked to G3 Maintain Working Relationships in the Motor Vehicle Environment.
Assessment requirements specified by a sector or regulatory body:	This unit was developed by the IMI, the sector skills council for the automotive retail industry. All assessments have been developed in accordance with the IMI Assessment Requirements for VRQs.
Aim:	This unit will help the learner develop the skills required to keep good working relationships with all colleagues and customers in the automotive work environment by using effective communication and support.

Learning outcome
The learner will:
1. Be able to work effectively within the organisational structure of the automotive work environment.
Assessment criteria
The learner can:
1.1 respond promptly and willingly to requests for assistance from customers and colleagues
1.2 refer customers and colleagues to the correct person should requests fall outside their responsibility and capability.

Learning outcome
The learner will:
2. Be able to obtain and use information in order to support their job role within the automotive work environment.
Assessment criteria
The learner can:
2.1 select and use legal and technical information, in an automotive work environment.

Learning outcome
The learner will:
3. Be able to communicate with and support colleagues and customers effectively within the automotive work environment.
Assessment criteria
The learner can:
3.1 use methods of communication with customers and colleagues which meet their needs
3.2 give customers and colleagues accurate information
3.3 make requests for assistance from or to customers and colleagues clearly and courteously.

Learning outcome
The learner will:
4. Be able to develop and keep good working relationships in the automotive work environment.
Assessment criteria
The learner can:
4.1 contribute to team work by initiating ideas and co-operating with customers and colleagues
4.2 treat customers and colleagues in a way which shows respect for their views and opinions
4.3 make and keep achievable commitments to customers and colleagues
4.4 inform colleagues promptly of anything likely to affect their own work.

Unit 305 Skills in supporting job roles in the automotive work environment

Supporting information

Assessment requirements

The assessment requirements are shown in full in the assessment documentation.

Unit 306   Skills to identify and agree motor vehicle customer service needs

UAN:	M/601/6286
Level:	3
Credit value:	5
GLH:	40
Relationship to NOS:	This unit is linked to G8 Identify and agree the motor vehicle customer needs.
Assessment requirements specified by a sector or regulatory body:	This unit was developed by the IMI, the sector skills council for the automotive retail industry. All assessments have been developed in accordance with the IMI Assessment Requirements for VRQs.
Aim:	This unit is about the skills required to: gain information from customers on their perceived needs; give advice and information and agree a course of action; contract for the agreed work and complete all necessary records and instructions.

Learning outcome
The learner will:
1.   Be able to obtain relevant information from the customer.
Assessment criteria
The learner can:
1.1   obtain and interpret sufficient, relevant information, from the customer to make an assessment of their needs
1.2   clarify customer and vehicle needs by referring to vehicle data and operating procedures.

Learning outcome
The learner will:
2.   Be able to provide relevant information to the customer.
Assessment criteria
The learner can:
2.1   provide customers with accurate, current and relevant advice and information, in a form that the customer will understand
2.2   demonstrate techniques which encourage customers to ask questions and seek clarification during conversation.

Learning outcome
The learner will:
3.   Be able to agree work undertaken with the customer.
Assessment criteria
The learner can:
3.1   summarise and record work agreed with the customer, before accepting the vehicle
3.2   implement confirmation of the agreement by ensuring customer understanding.

Learning outcome
The learner will:
4.   Be able to ensure recording systems are implemented correctly.
Assessment criteria
The learner can:
4.1   use recording systems which are accurate and complete, in the required format and signed by the customer where necessary
4.2   perform the next stage in the process by passing on completed records to the correct person promptly
4.3   demonstrate correct procedures for customer approval where the contracted agreement is likely to be exceeded.

Unit 306 Skills to identify and agree motor vehicle customer service needs

Supporting information

Assessment requirements

The assessment requirements are shown in full in the assessment documentation.

Unit 353   Knowledge in monitoring procedures to control risk to health and safety

UAN:	**T/502/6484**
Level:	3
Credit value:	5
GLH:	40
Relationship to NOS:	This unit is linked to the IMI NOS G14
Assessment requirements specified by a sector or regulatory body:	This unit must be assessed in accordance with the IMI Assessment Strategy and adhere to the knowledge unit syllabus, both of which can be downloaded from the **IMI** website. This unit is supported by the IMI SSC.
Aim:	This unit enables the learner to develop an understanding to monitor: • routine maintenance and cleaning of the automotive environment and using resources economically • health and safety legislation and duties of everyone in the motor vehicle environment. It will provide an appreciation of significant risks in the automotive environment and how to identify and deal with them. Once completed the learner will be able to identify hazards and evaluate and reduce risk.

Learning outcome
The learner will:
1. Understand health and safety legislation and workplace policies.
Assessment criteria
The learner can:
1.1 explain the employers' and employees, **legal duties** for health and safety within the workplace
1.2 identify their own **responsibilities for health and safety** as defined by legislation covering their job role.

Range
1.1 Legal duties
Insurance requirements, safe working environment, risk assessment policies, HASAWA, COSHH, Environmental Protection Act (EPA), Manual Operations Regulations, PPE Regulations, training, welfare and wellbeing, waste management policy/procedure.
1.2 Responsibilities for health and safety
Duty of care for all individuals, maintenance of equipment.

Learning outcome
The learner will:
2. Understand risks to health and safety.
Assessment criteria
The learner can:
2.1 identify the difference between a risk and a hazard
2.2 identify what **hazards** may exist in their workplace
2.3 identify particular **risks** that may exist for their specific job role
2.4 explain what **precautions** can be taken to reduce these risks
2.5 explain the **importance** of being alert to the presence of **hazards**.

Range
2.2 Hazards
Slip, falls and trip, environmental (brake dust, air pollution, exhaust gases), roads, equipment.
2.3 Risks
Equipment, hydraulic, pneumatic injury, electrocution, operational (driving, working), manual handling and lifting.
2.4 Precautions
Risk assessment (PPE, driving, COSHH, age range), wellbeing of others (duty of care).
2.5 Importance
Efficiency at work, reduction in number of injuries, financial consequences, own well-being, reduced number of insurance claims, Increased customer satisfaction.

Learning outcome
The learner will: 3. Understand the importance of monitoring and controlling health and safety.
Assessment criteria
The learner can: 3.1 explain their workplace **health and safety policies and procedures** 3.2 explain how to keep **health and safety records** 3.3 identify effective **communication methods** 3.4 identify **effective methods** for monitoring activities with respect to health and safety 3.5 explain the **importance** of promptly **dealing with significant risks** in the workplace.

Range
3.1 Health and safety policies and procedures Insurance requirements, risk assessment policies, HASAWA, COSHH, Environmental Protection Act (EPA), Manual Operations Regulations, PPE Regulations, training, waste management. **3.2 Health and safety records** Date, time, incident, details, names, witnesses, outcomes, stakeholder to be informed. **3.3 Communication methods** Visual (notice boards, posters, presentations), aural, oral (meetings), electronic methods, postal, signs. **3.4 Effective methods** Training and testing, review policies and procedures, monitoring the environment. **3.5 Dealing with significant risks** Risks to individual, risks to environment, removing hazards to minimise risks. **3.5 Importance** Legal implications, endangering human life, financial implications.

Learning outcome
The learner will:
4. Understand the scope of their role regarding health and safety.
Assessment criteria
The learner can:
4.1 identify the **work areas** and the people they are responsible for
4.2 identify the scope of their job and capabilities regarding health and safety matters.

Range
4.1 Work areas
Operational workshop/s (paint and mechanical), parts, sales, reception, forecourt and vehicle storage.

Unit 353　　　Knowledge in monitoring procedures to control risk to health and safety

Supporting information

Guidance

Health and safety policies within the work place

Employer's responsibility:
* identifying workplace health and safety risks to health
* actions needed after assessing risks to health
* health and safety policies
* supporting health and safety matters
* information needed for health and safety training
* welfare and first aid facilities
* the requirements for Personal Protective Equipment (PPE)
* emergency procedures
* precautions needed for dangerous area including safety signs
* manual handling and lifting operations
* the reporting of injuries, diseases and dangerous occurrences to the appropriate authorities.

Employee's responsibility:
* reasonable care requirements
* the need for employee's to meet statutory requirements
* interference or misuse of anything provided for health and safety in the workplace
* instruction requirements for correct equipment use
* health and safety training for employers and employees
* adhere to agreed safe practices
* reporting of hazards and risks
* communication of health and safety issues
* correct PPE where required
* lines of responsibility from strategic to operational roles.

Monitoring and controlling health and safety

Identifying hazards in the workplace, the list may include:
- trolley jacks and lifting equipment
- pits
- recovery equipment
- other road users
- oils and chemicals
- tools
- fuel
- extension leads and electric cables
- air and hydraulic lines.

Precautions to reduce the risk may include:
- regular servicing of equipment
- care of tools clean
- cleaning spillages
- appropriate PPE
- driving and working on a carriageway.

Methods of monitoring activities with respect to health and safety; methods may include:
- observe and assessing working activities
- review accident records
- review procedures
- additional training.

Effective communication techniques with respect to health and safety; the list should include:
- induction to employment and change of role
- training needs analysis
- warning signs
- PPE signs
- safe condition signs
- risk assessment procedures
- demonstration.

Unit 354 Knowledge of how to make learning possible through demonstrations and instruction

UAN:	**T/601/6242**
Level:	3
Credit value:	5
GLH:	45
Relationship to NOS:	This unit is linked to the IMI NOS G6
Assessment requirements specified by a sector or regulatory body:	This unit must be assessed in accordance with the IMI Assessment Strategy and adhere to the knowledge unit syllabus, both of which can be downloaded from the **IMI** website. This unit is supported by the IMI SSC.
Aim:	This unit enables the learner to develop an understanding of how to carry out demonstrations and instruction which will help the learner to learn. It includes demonstrating equipment, showing skills, giving instruction, deciding when to use demonstration or instruction, potential of technology based learning, checking on learners' progress and giving feedback.

Learning outcome
The learner will:
1. Understand the nature and role of demonstrations and instruction.
Assessment criteria
The learner can:
1.1 classify the separate areas of demonstrations which **encourage learning**
1.2 identify which **types of learning** are best achieved and supported through demonstrations
1.3 explain how to identify and use **different learning opportunities**
1.4 explain how to **structure demonstrations and instruction sessions**
1.5 explain how to choose from a **range of demonstration techniques.**

Range
1.1 Encourage learning (understand areas of demonstrations)
Practical skills, questioning techniques, visual-aids, task repetition.
1.2 Types of learning
Knowledge, comprehension, application, analysis.
1.3 Different learning opportunities
Establish prior knowledge and experience, through observation, using assessment.
1.4 Structure demonstrations and instruction sessions
Work environment, people taking part, type of task, time keeping.
1.5 Range of demonstration techniques
Abilities of people, work environment, time constraints, available resources.

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Learning outcome
The learner will:
2. Understand the principles and concepts of demonstration and instruction.

Assessment criteria
The learner can:
2.1 describe how to put **learners at ease and encourage them** to take part
2.2 justify the choice between **demonstration and instruction** as a learning method
2.3 explain how to identify **individual learning needs**
2.4 clarify which **factors are likely to prevent learning and how to overcome them**
2.5 explain how to **check learners' understanding and progress**
2.6 explain how to choose and prepare **appropriate materials**
2.7 explain the separate areas of instructional **techniques which encourage learning**
2.8 describe which **types of learning are best achieved and supported through instruction**.

Range
2.1 Learners at ease and encourage them
Tone and speed of voice, eye contact, demonstration of task, group sessions.
2.2 Demonstration and instruction
Workplace skills, knowledge, competence, resources, time constraints.
2.3 Individual learning needs
Skills, competence, questioning techniques, experience.
2.4 Factors are likely to prevent learning and how to overcome them
Factors that prevent learning: age, knowledge, language, skills, abilities
How to overcome factors that prevent learning: learning styles, pace and speed of delivery, resources.
2.5 Check learners' understanding and progress
Assessment, verbal / written questions, assignments. Simulation.
2.6 Appropriate materials
Hand-outs, presentations, question / answer sheets.
2.7 Techniques which encourage learning
Theory, practical, demonstration.
2.8 Types of learning are best achieved and supported through instruction
Visual, auditory, kinaesthetic.

Learning outcome
The learner will: 3. Understand the external factors influencing human resource development.

Assessment criteria
The learner can: 3.1   explain how to make sure everybody acts in line with **health, safety** and environmental protection, legislation and best practice 3.2   analyse **developments in technology** based learning and new ways of delivery.

Range
3.1 Health, safety Risks, hazards, policies, procedures. **3.2 Developments in technology** Multimedia, internet.

Unit 354   Knowledge of how to make learning possible through demonstrations and instruction

Supporting information

Guidance

1.1 Separate areas of demonstration which encourage learning:

- Practical skills
- Questioning techniques
- Visual aids
- Task repetition.

1.2 Identify which types of learning are best achieved and supported through demonstrations:

- Knowledge
- Comprehension
- Application
- Analysis:
    - purpose – the aim or objective
    - procedure – the most effective way of completing the task
    - practice – all skills require practice to improve
- Practical tasks are more quickly learnt through demonstration
- Emphasis is required to body movements when demonstrating
- The demonstrator should encourage learners to ask questions
- Emphasis should be placed upon key points whilst demonstrating
- Any demonstration should ensure that all safety aspects are covered.

1.3 Explain how to identify and use different learning opportunities:

- Establish prior knowledge and experience
- Through observation
- Using assessment.

1.4 How to structure demonstration and instruction sessions:

- The demonstration and/or instruction ensure that the following good practice is recognised:
    - identify key points
    - relate theoretical underpinning knowledge to key points
    - rehearse to ensure that all equipment is working
    - ensure all students can see even small equipment and processes
    - time the demonstration
    - consider how to make students participate
    - consider how to emphasise safe working practices.

- During the demonstration and/or instruction good practice is to:
  - give a clear introduction
  - identify any tools/equipment
  - determine the current audience level of knowledge
  - complete the demonstration correctly (do not show how not to do it)
  - stress key points and show links between them
  - monitor safety aspects
  - check learner understanding.
- After the demonstration (if possible):
  - enable the audience to practice the techniques
  - provide feedback on their performance.

1.5 Explain how to choose from a range of demonstration techniques:

- How to identify individual learning needs
- Abilities of people
- Work environment
- Time constraints
- Available resources.

2.1 Describe how to put learners at ease and encourage them to take part:

- What competencies they already have
- What experience they have of the subject area
- What competencies they need to achieve
- What demonstration techniques are best suited to their needs
- How you will assess their needs have been met.

2.2 Justify the choice between demonstration and instruction as a learning method:

- Skills
- Competence
- Questioning techniques
- Experience.

2.4 Factors that are likely to prevent learning:

- Language barriers
- Physical barriers
- Specialist knowledge
- Pace of learning
- Method of delivery
- Environmental factors
- Teaching styles
- Dyslexia.

2.5 How to check learners understanding and progress:
- Questionnaires
- Verbal questioning
- Observation
- Assessment
- Role play
- Projects/assignments
- Multi-choice questions
- Simulation
- Tests
- How to choose and prepare appropriate materials
- Identify the course aim
- Identify the subject aim
- Identify the lesson aim
- Complete a lesson plan - plan the teaching
- Identify a series of 'cues' to be used during the lesson
- Logically organise the information
- Use suitable resources and equipment to maximise learning opportunities
- Assess the learner's progress and understanding.

2.7 Instructional techniques:
- Lectures
- Handouts
- Team teaching
- Peer teaching
- Discussion – individual, group and peer
- Question and answer
- Multimedia
- Seminars
- Case studies
- Project/assignments

2.8 Types of learning are best achieved and supported through instruction
- Visual
- Auditory
- Kinaesthetic.

Environmental factors that effect learning:

Environmental factors that should be considered before demonstration/instruction to include:

- loud noises
- bright colours
- bright lights
- strong smells
- atmosphere
- temperature
- classroom seating
- classroom layout
- assessment of risk and hazards
- condition of electrical/electronic equipment
- position of cables and wires
- safety of equipment used in demonstration/instruction
- condition of classroom equipment/furniture/structure
- suitable protective clothing/equipment

3.2 Developments in learning:

- Multimedia based materials
- Web based materials
- Interactive materials.

Unit 355   **Knowledge of support for job roles in the automotive work environment**

UAN:	T/601/6175
Level:	3
Credit value:	3
GLH:	20
Relationship to NOS:	This unit is linked to the IMI NOS unit MR15
Assessment requirements specified by a sector or regulatory body:	This unit must be assessed in accordance with the IMI Assessment Strategy and adhere to the knowledge unit syllabus, both of which can be downloaded from the **IMI** website.
Aim:	This unit enables the learner to develop the understanding of how to maintain good working relationships with colleagues in the automotive work environment by using effective communication and support for the benefit of the organisation.

Learning outcome
The learner will:
1. Understand key organisational structures, functions and roles within the automotive work environment.

Assessment criteria
The learner can:
1.1 describe the purpose of the **main sections** of a typical automotive work environment
1.2 describe **organisational structures** and lines of communication within the automotive work environment
1.3 explain levels of responsibility within **specific job roles** in automotive workplace.

Range
1.1 Main sections
Service and repair workshop, stores, valet bay, sales, fast fit , panel repair, paint, vehicle storage, new vehicle preparation.
1.2 Organisational structures
Directors, senior management, department middle management, department supervisor, operators and technicians, apprentices and trainees.
1.3 Specific job roles
Master technicians, vehicle maintenance and repair technicians, quality control, stores, valet, sales, supervisory and management.

Learning outcome
The learner will:
2. Know the importance of obtaining, interpreting and using information in order to support their job role within the automotive work environment.
Assessment criteria
The learner can:
2.1 identify and explain the importance of different **sources of information** in a automotive work environment
2.2 explain how to find, interpret and use relevant sources of information
2.3 describe **legal requirements** relating to the vehicle, including road safety requirements
2.4 explain the importance of working to **recognised procedures** and processes
2.5 explain when replacement **units and components** must meet the manufacturers' original equipment specification
2.6 explain the purpose of how to use **identification codes.**

Range
2.1 Sources of information
Computer , paper, signs and posters, manufactures updates, manufacture and specialist training, Vehicle Inspectorate, legislation updates, Health and Safety, COSHH.
2.3 Legal requirements
Highways department, local by-laws, vehicle types and use, emission control.
2.4 Recognised procedures
Vehicle manufactures procedures and legal requirements.
2.5 Units and Components
Engine, chassis, transmission, electrical and electronic systems.
2.6 Identification codes
Vehicle Identification Numbers (VIN), replacement component numbers for engine, chassis, transmission, electrical and electronic systems.

Learning outcome
The learner will:
3. Understand the importance of different types of communication within the automotive work environment.

Assessment criteria
The learner can:
3.1 explain where different methods of communication would be used within the **automotive environment**
3.2 explain the factors which can determine your **choice of communication**
3.3 explain how the communication of information can change with the **target audience**.

Range
3.1 Automotive environment Vehicle sales, workshops, preparation. **3.2 Choice of communication** Customers, staff, manufactures of vehicles and components. **3.3 Target audience,** Staff, customers, suppliers.

Learning outcome
The learner will:
4. Know communication requirements when carrying out vehicle repairs in the automotive work environment.

Assessment criteria
The learner can:
4.1 explain how to report using written and verbal communication
4.2 explain the importance of documenting information relating to work carried out in the automotive environment
4.3 explain the importance of working to **agreed timescales.**

Range
4.3 Agreed timescales External customers, internal sales, manufacture warranty.

Learning outcome
The learner will: 5. Know how to develop good working relationships with colleagues and customers in the automotive workplace.
Assessment criteria
The learner can: 5.1 describe how to develop positive working relationships with colleagues and customers 5.2 explain the importance of developing positive working relationships 5.3 explain the importance of accepting other **peoples' views and opinions** 5.4 explain the importance of making and honouring **realistic commitments**.

Range
5.3 Peoples' views and opinions Immediate and non-immediate line management, supervisors, informed and non-informed customers. **5.4 Realistic commitments** Timescales for repair, service and delivery.

Unit 355 Knowledge of support for job roles in the automotive work environment

Supporting information

Guidance

The structure of a typical vehicle repair business:

Areas within the business:

- Body shop
- Vehicle repair workshop
- Paint shop
- Valeting
- Vehicle parts store
- Main office
- Vehicle sales
- Reception.

Sources of information:

- other staff
- manuals
- parts lists
- computer software and the internet
- manufacturer
- diagnostic equipment.

Levels of responsibility within specific job roles in automotive workplace; to include:

- trainee and apprentice
- skilled operator and technician
- supervisor
- middle manager
- senior manager.

Communication requirements when carrying out vehicle repairs:

- Locating and using correct documentation and information for:
  - recording vehicle maintenance and repairs
  - vehicle specifications
  - component specifications
  - oil and fluid specifications
  - equipment and tools
  - identification codes.

- Procedures for:
    - referral of problems
    - reporting delays.
- Additional work identified during repair or maintenance.
- Keeping others informed of progress.

Methods of communication
- Verbal
- Signs and notices
- Memos
- Telephone
- Electronic mail
- Vehicle job card
- Notice boards
- SMS text messaging
- Letters.

Organisational and customer requirements
- Importance of time scales to customer and organisation
- Relationship between time and costs
- Meaning of profit.

Importance of maintaining positive working relationships
- Morale
- Productivity
- Company image
- Customer relationships
- Colleagues.

How the communication of information can change with the target audience; to include:
- uninformed people
- informed people.

Unit 356   **Knowledge of how to identify and agree customer service needs**

UAN:	R/601/6247
Level:	3
Credit value:	5
GLH:	45
Relationship to NOS:	This unit is linked to IMI NOS MR18
Assessment requirements specified by a sector or regulatory body:	This unit must be assessed in accordance with the IMI Assessment Strategy and adhere to the knowledge unit syllabus, both of which can be downloaded from the **IMI** website.
Aim:	This unit enables the learner to develop an understanding of how to gain: information from customers on their perceived needs; give advice and information and agree a course of action; contract for the agreed work and complete all necessary records and instructions

Learning outcome
The learner will:
1. Know legislative and organisational requirements and procedures.
Assessment criteria
The learner can:
1.1 describe the **fundamental legal requirements** of current consumer legislation and the consequences of their own actions in respect of this legislation
1.2 describe the content and **limitations of company and product warranties** for the vehicles dealt with by their company
1.3 explain the **limits of their own authority** for accepting vehicles
1.4 explain the importance of **keeping customers informed of progress**
1.5 describe their workplace requirements for the **completion of records**
1.6 explain how to complete and process all the **necessary documentation.**

Range
1.1 Fundamental legal requirements
Customer fundamental sales rights, customer and sales contract and tort limitations.

1.2 Limitations of company and product warranties
Expressed and implied warranty.

1.3 Limits of their own authority
Customers own responsibilities when contracting and accepting work.

1.4 Keeping customers informed of progress
Timescales, methods of communication and contact details.

1.5 Completion of records
Paper record storage, computer systems and data bases.

1.6 Necessary documentation
Records procedures for sales, service, new and old vehicles, legal procedures and requirements.

Learning outcome
The learner will:
2. Know how to communicate and care for customers.
Assessment criteria
The learner can:
2.1 explain how to **communicate effectively** with customers
2.2 describe how to adapt your **language when explaining technical matters** to non-technical customers
2.3 explain how to use effective **questioning techniques**
2.4 describe how to care for customers and achieve **customer satisfaction.**

Range
2.1 Communicate effectively
Electronic methods (phone, text, e-mail).
2.2 Language when explaining technical matters
Language and tone, rephrase methods.
2.3 Questioning techniques
Effective listening, open, closed and probing questioning methods.
2.4 Customer satisfaction
Effective communication methods, timescales, honesty and fairness.

Learning outcome
The learner will:
3. Know company products and services.

Assessment criteria
The learner can:
3.1 describe the range of options available to resolve **vehicle problems**
3.2 describe the range and **type of services** offered by their company
3.3 explain the effect of resource availability upon the **receipt of customer vehicles** and the completion work
3.4 explain how to **access costing and work completion** time information.

Range
3.1 Vehicle problems
New and used vehicle warranty limits, motability, legal responsibility, sale of goods act.
3.2 Type of services
Vehicle and part sales, repair and replacement of units and components, body and paint, courtesy vehicle support.
3.3 Receipt of customer vehicles
Companies legal responsibility for care of customer vehicles, storage of personal goods.
3.4 Access costing and work completion
Menu service costing, repair times, hourly rates, insurance work, warranty work.

Unit 356 Knowledge of how to identify and agree customer service needs

Supporting information

Guidance

Organisational requirements

- Explain the organisation's terms and conditions applicable to the acceptance of customer vehicles.

- Explain the content and limitations of vehicle and component warranties for the vehicles dealt with by your organisation.

- Detail what, if any, limits there are to the authority for accepting vehicles.

- Detail why it is important to keep customers advised of progress and how this is achieved within the organisation.

- Detail the organisation's procedures for the completion and processing of documentation and records, including payment methods and obtaining customer signatures as applicable.

Principles of customer communication and care

- First Impressions

- Listening skills – 80:20 ratio

- Eye contact and smiling

- Showing interest and concern

- Questioning techniques and customer qualification

- Giving clear non-technical explanations

- Confirming understanding (statement/question technique, reflective summary)

- Written communication – purpose, content, presentation and style

- Providing a high quality service – fulfilling (ideally exceeding) customer expectations within agreed time frames

- Obtaining customer feedback and corrective actions when dissatisfaction expressed

- Dealing with complaints.

Company products and services

- Service standards:
  - national
  - manufacturer
  - organisational.
- The range and type of services offered by the organisation:
  - diagnostic
  - servicing
  - repair
  - warranty
  - MOT testing
  - fitment of accessories/enhancements
  - internal.
- The courses of action available to resolve customer problems:
  - the extent and nature of the work to be undertaken
  - the terms and conditions of acceptance
  - the cost
  - the timescale
  - required payment methods.
- The effect of resource availability upon the receipt of customer vehicles and the completion of work:
  - levels and availability of equipment
  - levels and availability of technicians
  - workshop loading systems.
- How to access costing and work completion time information:
  - manuals
  - computer based.

Vehicle information systems, servicing and repair requirements

- Accessing technical data including diagnostics.
- Servicing to manufacturer requirements/standards.
- Repair/operating procedures.
- MOT standards/requirements.
- Quality controls – interim and final.
- Requirements for cleanliness of vehicle on return to customer.
- Handover procedures.

Consumer Legislation, to include:

- consumer protection
- sale of goods
- data protection
- product liability
- health and safety
- discrimination.

Unit 401 Knowledge of diagnosing motor vehicle faults where no prescribed process or format is available

UAN:	Y/502/6445
Level:	4
Credit value:	5
GLH:	42
Relationship to NOS:	This unit is linked to IMI NOS MR14
Assessment requirements specified by a sector or regulatory body:	This unit must be assessed in accordance with the IMI Assessment Strategy and adhere to the knowledge unit syllabus, both of which can be downloaded from the **IMI** website.
Aim:	This unit enables the learner to demonstrate the knowledge and skills necessary when standard diagnostic activities and procedures fail to identify the system or unit failure. Learners will also develop high levels of problem solving and autonomy when making decisions when rectifying and repairing vehicle system and unit faults.

Learning outcome
The learner will:
1. Understand where to find, interpret and use sources of information.
Assessment criteria
The learner can:
1.1   explain using examples for a specific diagnostic task, where and how to find and interpret, **sources of information** on:
a. vehicle specifications including limits, fits and tolerances
b. diagnostic test procedures
c. vehicle data
d. repair procedures
1.2   explain, using examples for a specific diagnostic task, how to evaluate and analyse **test results**.

Range
1.1 Sources of information
Vehicle markings, VIN plates, electronic data bases, paper documents, manufacturer's information, customer information.

1.2 Test results

Computer readings, oscilloscope, fault codes, exhaust emission, hand held test meters for the following readings (mechanical, hydraulic, temperature, specific gravity, pressure, voltage, current, resistance, light).

Learning outcome
The learner will:
2.   Understand electrical and electronic principles.

Assessment criteria

The learner can:
2.1   explain the principles of vehicle **electrical and electronic system** operation in relation to fault finding on specific systems including:
     a. electrical component function
     b. electrical inputs/outputs
     c. voltages
     d. oscilloscope patterns
     e. digital systems
     f. fibre optic systems
     g. sensors and actuators (inc application)
     h. multiplexing
2.2   interpret **circuit diagrams** relating to systems being tested
2.3   explain how vehicle **systems interface and interact** with each other.

Range
2.1 Electrical and electronic system Control systems for the following areas: engine, transmission, chassis, infotainment, comfort. **2.2 Circuit diagrams** Symbols, standard wire circuits, DIN, computer and paper based diagrams. **2.3 System interface and interact** (system interaction) Multiplexing, vehicle sensor and actuation sharing between vehicle control modules, known as the following terms (ECU's / PCM's/ECM's).

Learning outcome
The learner will:
3. Understand a selected vehicle system.

Assessment criteria
The learner can:
3.1   describe how a selected vehicle system is **constructed** and operates
3.2   explain how a selected **vehicle system** is dismantled and reassembled

Range
3.1 Constructed (construction and operation)
Vehicle layouts for: Front, Rear and Four Wheel Drive (FWD, RWD, 4WD).
Engine layout and types of four stroke compression and spark ignition.
Transmission types of manual, automatic, Constant Variable Transmission (CVT), Dual Clutch (DSG).
3.2 Vehicle system(s)
Engine, transmission, chassis, electrical and electronic.

Learning outcome
The learner will:
4. Understand the use of diagnostic and rectification equipment for diagnosing a vehicle system.

Assessment criteria
The learner can:
4.1   explain how to prepare and test the accuracy of **diagnostic testing equipment**
4.2   explain how to use general diagnostic and rectification equipment and where appropriate, **specialist repair tools.**

Range
4.1 Diagnostic testing equipment (diagnostic and rectification equipment)
Computer interface, oscilloscope, fault code scanner, exhaust emission, hand held test meters for the following readings (mechanical, hydraulic, temperature, specific gravity, pressure, voltage, current, resistance, light, torque).
4.2 Specialist repair tools
Specific vehicle manufacturer designed equipment, rolling road, four wheel alignment, body alignment, tyre fitting and balance.

Learning outcome
The learner will:
5. Understand how to diagnose and rectify a vehicle system fault where there is no prescribed process.
Assessment criteria
The learner can:
5.1 describe types and causes of vehicle **component and unit** faults and failures
5.2 justify selection and methodology of **diagnostic procedures** and processes in order for diagnostic activities to proceed
5.3 explain how to assess faults in **vehicle systems**
5.4 explain how to carry out rectification activities of faults found in selected vehicle systems.

Range
5.1 Component and unit(s)
Engine units and components which support (lubrication, cooling, fuel, air, exhaust, electrical and electronic)
Transmission units and components which support (clutch, gearbox, drive line, bearings and hubs)
Chassis units and components which support (steering, suspension and brakes)
Electrical and electronic units and components which support the main vehicle areas of Engine, Transmission and Chassis.
Lighting, entertainment, information, starting, charging, heating, ventilation and air-conditioning, instrumentation, hybrid, batteries.
5.2 Diagnostic procedures
Electronic, hydraulic, pneumatic and mechanical checks. Visual, measurement and on-board vehicle diagnostics.
5.3 Vehicle systems
Engine, transmission, chassis, electrical and electronic.

Learning outcome
The learner will:
6. Understand the importance of recording information when diagnosing faults.
Assessment criteria
The learner can:
6.1 explain the importance of recording:
a. diagnostic test results
b. fault locations
c. correction activities
d. rectification information.

Unit 401 Knowledge of diagnosing motor vehicle faults where no prescribed process or format is available

Supporting information

Guidance

Sources of information are:
- paper based
- electronic based
- vehicle manufacturer
- vehicle identification plates and markings.

Information found in:
- workshop area
- office area
- reception area
- vehicle stores
- vehicle sales.

Be familiar with:
- Computer passwords
- Good house keeping.

Diagnostic procedures from data:
- Technical manuals
- Computer based diagnostic information
- Manufacturer
- Diagnostic codes
- ECU stored data.

Understand the terms:
- Analyse
- Diagnose
- Evaluate
- Repair procedures
- Interpret information
- Interpret data
- Calibration.

Diagnostic equipment: Examples include electronic testing equipment, brake testing equipment, steering geometry equipment, wheel balancing equipment, emission test equipment, measuring instruments, special service tools, charging service stations, noise and vibration detection equipment.

Vehicle types: Spark ignition (SI) Compression ignition (CI) Hybrid, electric or alternative fuelled vehicles, eg LPG, Bio ethanol etc.

Vehicle engine area: Engines, cooling systems, Lubrication system, ignition, petrol fuel injection, diesel fuel injection, engine management systems, air intake and exhaust emission and noise control.

Transmission and driveline area: Clutch assemblies, clutch operating systems, manual gear boxes, automatic gear boxes (including electronic control), drivelines and hubs and final drive assemblies.

Chassis or frame area: Suspension systems, assisted steering systems, non-assisted steering systems, braking systems, ABS/traction control, wheels and tyres, E.S.P. stability systems, bodywork and related areas.

Electrical and electronic area: Starting systems, charging system, body electrical systems (including wiring harnesses, lighting systems, auxiliaries, CANBUS systems, fibre optics, vehicle condition and monitoring, comfort and convenience, alarm systems), supplementary restraint systems (SRS), heating and air conditioning systems, climate control, communication equipment, navigation systems and entertainment equipment.

Causes of faults are:
- mechanical
- electrical
- electronic
- hydraulic
- temperature.

Faults cover the:
- vehicle engine area
- transmission and driveline area
- chassis system area
- electrical and electronic units and components area.

Diagnostic methods are:
- measurement
- functional testing
- electrical and electronic systems testing.

Diagnostic testing is defined as:

- verify the fault
- collect further information
- evaluate the evidence
- carry out further tests in a logical sequence
- rectify the problem
- check all systems.

Diagnostic equipment is:

- diagnostic and rectification equipment for mechanical systems
- diagnostic and rectification equipment for electrical and electronic systems
- diagnostic and rectification equipment for hydraulic and fluid systems
- diagnostic and rectification equipment for pneumatic systems
- specialist repair tools
- general workshop equipment.

Rectification activities are defined as:

A suitable repair, replacement, re-coding or re-programming that rectifies the fault(s) identified from the diagnostic activities carried out.

Unit 403 **Knowledge of providing diagnostic equipment and technical information system support in motor vehicle environments**

UAN:	**L/502/6457**
Level:	4
Credit value:	2
GLH:	12
Relationship to NOS:	This unit is linked to LV14 (Mandatory Units – LV14 to LV18)
Assessment requirements specified by a sector or regulatory body:	This unit must be assessed in accordance with the IMI Assessment Strategy and adhere to the knowledge unit syllabus, both of which can be downloaded from the **IMI** website. This unit is supported by the IMI SSC.
Aim:	This unit enables the learner to develop the knowledge required for updating technical information system and diagnostic equipment and for testing and rectifying equipment and system problems.

Learning outcome
The learner will:
1. Understand workplace and manufacturer procedures associated with using, updating and maintaining technical information systems and diagnostic equipment.
Assessment criteria
The learner can:
1.1 summarise workplace procedures for: a. obtaining diagnostic **software updates** b. **loading/installing** technical information system and diagnostic equipment software to specified destinations using manufacturers software loading instructions c. **accessing system support** services d. understanding and disseminating to colleagues the **legal requirements** governing the use of software e. ordering and fitting **replacement/spare parts** to technical information systems and diagnostic equipment f. **informing others** that a technical/software update has taken place g. completing **product registrations** h. **reporting problems.**

Range
1.1 Workplace procedures: a. **software updates**: internet, CD roms, USB dongles b. **loading/installing software**: updates, access internet, passwords, and login's, access codes, reboot device c. **accessing system support**: websites, phone, email d. **legal requirements**: licensing agreements, criminal prosecution, Licensing Act 2003 e. **replacement/spare parts**: serial number, software version, manufacturer's instructions, and administration rights f. **informing others**: emails, notice boards, verbal, training, work place procedures g. **product registrations**: manufacturers website, phone, postal h. **reporting problems:** verbal, face to face written, email, websites.

Learning outcome
The learner will:
2. Understand how to maintain and diagnose faults on technical information systems and diagnostic equipment.

Assessment criteria
The learner can:
2.1 explain how to solve minor errors in the loading of software onto technical information systems and diagnostic equipment
2.2 explain how to set configuration options on technical information systems and diagnostic equipment that they work on
2.3 clarify when it is best to apply the technical information systems and diagnostic equipment self test function(s)
2.4 describe how to identify faults using the technical information systems and diagnostic equipment self test function(s)
2.5 describe how to resolve problems using the technical information systems and diagnostic equipment self test function(s) and external support services
2.6 describe the types and causes of errors that can arise during loading of software
2.7 explain the need for correct technical information systems and diagnostic equipment configuration settings
2.8 explain why it is important to install software updates promptly.

Range
2.1 Minor errors in the loading of software
Configuration issues, incompatibility of software systems, hard drive space, download speeds.
2.2 Configuration options
Vehicle specification, relevant country, software version, manufacturer's website.
2.3 Self-test functions
Error codes, communication error, conflict error, antivirus programmes.
2.4 Faults using the technical information systems
Antivirus software, on screen prompts, manufacturers support sites.
2.5 Problems using the technical information systems
Software fire walls, software updates, removing/reinstalling programs.
2.6 Types and causes of errors
Program conflicts, incorrect systems, download speeds, anti-virus software.
2.7 Configuration settings
Latest specification, updates, software conflicts.
2.8 Install software updates
Latest specification, resolve conflict issues, warranty.

Learning outcome
The learner will:
3. Understand the importance of recording information and reporting/advising of changes, faults and failures promptly.
Assessment criteria
The learner can:
3.1 explain the **importance of recording the version number and** issue date of the software and updates used
3.2 explain the **importance of reporting faults and failures** of technical information system and diagnostic equipment or their software to the relevant person(s) promptly
3.3 explain the importance of promptly advising the relevant person(s) of **functionality changes** to technical information system and diagnostic equipment.

Range
3.1 Importance of recording the version number
Technical support, warranty, latest specification, license agreements.
3.2 Importance of reporting faults and failures
Warranty concerns, keep customers informed, technical support, and replacement parts.
3.3 Functionality changes (reporting)
Added features, software updates, software conflicts, train staff.

Unit 403 Knowledge of providing diagnostic equipment and technical information system support in motor vehicle environments

Supporting information

Guidance

Workplace procedures for updating and maintaining technical information

- Understand your own knowledge and awareness of manufacturer's products
- Understand manufacturers updating and maintenance policies and procedures
- Be aware of manufacturer's registration
- Be aware of manufacturer's warranty
- Understand company updating and maintenance policies and procedures
- Understand relevant health and safety policies
- Understand relevant copyrights policies
- Carry out installation checks
- Locate data updates
- Check and test equipment
- Loading of software
- Be aware of setting and configurations
- Confirm satisfactory operation of equipment
- Advise colleagues of updating
- Follow correct sequence
- Ensure updates are promptly installed
- Adhere to all legal requirements.

Diagnose faults on technical and diagnostic equipment:

- Be aware of equipment self test
- Understand your own knowledge and awareness of basic step by step diagnostic procedures set by:
  - manufacturer
  - company
- Be aware of manufacturer's warranty
- Carry out basic visual checks on electrical cables and fuses
- Be aware of physical damage
- Electrical cables
- Advise colleagues of faults
- Loading of software
- Be aware of setting and configurations
- Comply with health and safety
- Speak to colleagues to clarify fault and symptoms.

The importance of recording information and faults:

- Company time and cost is kept to a minimum
- Manufacturer's warranty can be implemented
- So correct updates are used
- Advise colleagues promptly of any equipment failure or change
- Provide information and guidance
- Information can be evaluated.

Unit 405   Knowledge of providing technical support and advice to colleagues in motor vehicle environments

UAN:	**M/502/6449**
Level:	4
Credit value:	5
GLH:	47
Relationship to NOS:	This unit is linked to the IMI NOS MR15
Assessment requirements specified by a sector or regulatory body:	This unit must be assessed in accordance with the IMI Assessment Strategy and adhere to the knowledge unit syllabus, both of which can be downloaded from the **IMI** website.
Aim:	This unit enables the learner to develop knowledge to enable them to provide a range of up-to-date technical support, information, advice, instruction and briefings to other workshop colleagues to support an effective and productive operation.

Learning outcome
The learner will:
1. Understand how to file, present and demonstrate technical information to workshop colleagues.
Assessment criteria
The learner can:
1.1 explain how to file and store **technical information** effectively
1.2 describe effective techniques and methods to give straightforward presentations on **technical matters**
1.3 describe effective techniques and **methods of instructing** colleagues and demonstrate tasks clearly and correctly.

Range
1.1 Technical information
Information from manufactures, customers, vehicle sales, parts departments, test readings, work orders.
1.2 Technical matters
Manufacture updates and bulletins, vehicle changes and updates, legislation, product recalls and modifications.
1.3 Methods of instructing
One to one, group work, manufacture and specialist training.

Learning outcome
The learner will:
2. Understand how to check colleagues work, give effective and positive feedback, advice and guidance.
Assessment criteria
The learner can:
2.1 describe **methods of effectively checking** colleagues work
2.2 state the best action to take when a colleagues work is not in line with **requirements**
2.3 explain how to **discuss colleagues work** with them in a way that will encourage them to be positive and not lead to conflict
2.4 distinguish between ways of **giving advice and guidance** which are appropriate to individual colleagues that are being supported
2.5 explain what might happen if a **colleagues self confidence** is undermined when correcting mistakes
2.6 explain the importance of liaising with their manager when evaluating colleagues work and giving feedback.

Range
2.1 Methods of effectively checking
Visual observation, road testing, meter test readings, physical checks, discussion, customer feedback, quality monitoring.
2.2 Requirements
Requirements of the company, vehicle and parts manufactures standards, Vehicle inspectorate, Government Legislation.
2.3 Discuss colleagues work
Providing feedback to colleagues, avoiding conflict, promoting positive working relationships and outcomes.
2.4 Giving advice and guidance
Supportive, timing, empathy and understanding, one to one meetings and appraisal.
2.5 Colleagues self confidence
Standards and performance, staff and customer relationships, attitudes to work.

Learning outcome
The learner will:
3. Understand how to recognise a training need and the importance of continuous development and learning.
Assessment criteria
The learner can:
3.1 describe **methods and techniques** used to recognise training needs in colleagues
3.2 explain the importance of continuous development and learning.

Range
3.1 Methods and techniques
Equipment training, Continuing Professional Development (CPD) legislation, Health and Safety, quality improvement, customer relations.

Unit 405   **Knowledge of providing technical support and advice to colleagues in motor vehicle environments**

Supporting information

Guidance

Store technical information:

- tidily
- logically
- securely.

- Comply with company health and safety, data and copy rights policies.

Types of technical information:

- Computer based
- Paper based
- Electronic Files and methods of back-up: cloud, servers, discs.

Presentations demonstrations and methods:

- One-to-one basis
- Group basis
- Formal (appropriate workplace area)
- Informal (appropriate workplace area).

Effective techniques:

- Determine individual support needs
- Inclusiveness: be supportive towards all individuals
- Ensure interruptions and distractions are kept to a minimum
- The importance of correct location and timing
- Avoid embarrassment of individuals
- Logical step by step process
- Check and assess learner understanding throughout.

Preparation for yourself and colleagues:
- **Yourself:**
  - tools
  - equipment
  - workshop manuals etc.
- **The learner:**
  - pen
  - paper
  - notes etc.
- Rehearse demonstrations, instructions and presentations
- Identify health and safety risks or hazards
- Individuals must be at ease and comfortable within the learning environment
- Emphasise safe working practices
- Emphasise logical and systematic technical approach
- Interaction between individuals
- Provide encouragement and understanding throughout.

Checking colleagues work:
- Direct observation of colleagues
- Indirect observation of colleagues
- Effective questioning for technical understanding
- Third party statements from colleague's supervisor and customers
- Provide encouragement and understanding
- Positively praise achievement
- Correct individual errors
- Show empathy and leadership
- Provide ongoing advice and support
- Feedback must always be positive
- Avoid embarrassment of colleagues
- Ensure interruptions and distractions are kept to a minimum
- The importance of correct location and timing.

Liaising with managers and supervisors:
- Analysis of training requirements of colleagues **which may lead to:**
  - further training in-house training (demonstrations and presentations)
  - manufacturers' courses
  - individual coaching
  - individual mentoring.

Recognising training needs through:
- Individual workplace performance through observations
- How individuals request for support
- Inability to use relevant equipment
- Inability to diagnose system faults
- Failure to carry out work to recognised company/industrial standards
- Failure to complete task in required time
- Analysing customer complaints.

The importance of continuous development and learning:

- Improve task time
- Improve practical techniques
- Reduce customer complaints
- Improve performance with further in-house training
- Improve standards with further manufacturers' courses
- Improve standards with individual coaching
- Improve performance with individual mentoring
- Continuous discussion and encouragement with individuals to improve self-esteem.

Unit 406　Knowledge in conducting diagnostic consultations with customers in motor vehicle environments

UAN:	M/502/6452
Level:	4
Credit value:	4
GLH:	27
Relationship to NOS:	This unit is linked to the IMI NOS MR 18
Assessment requirements specified by a sector or regulatory body:	This unit must be assessed in accordance with the IMI Assessment Strategy and adhere to the knowledge unit syllabus, both of which can be downloaded from the **IMI** website. This unit is supported by the IMI SSC.
Aim:	This unit enables the learner to develop the knowledge required to carry out diagnostic consultations with customers including making recommendations to ensure the customers concerns are addressed and that the customer fully understands the problems with their vehicle.

Learning outcome
The learner will:
1. Understand how to communicate effectively with customers, offer good customer care and present themselves in a suitable and professional manner.
Assessment criteria
The learner can:
1.1　describe **methods and techniques** used to communicate effectively with customers and listen to their concerns
1.2　describe different customer reactions and **methods and techniques** used to recognise and handle them effectively
1.3　explain effective **ways of adapting their language** when explaining technical matters to customers
1.4　describe **effective questioning techniques** to enable them to fully understand the problems with the vehicle
1.5　explain how to care for customers and **achieve customer satisfaction**
1.6　explain how **resolving customer concerns and problems effectively** and promptly contributes to customer loyalty and improved relationships
1.7　describe how to **present themselves in a positive and professional manner** to customers

1.8	justify **workplace requirements for personal appearance and conduct** when dealing with customers.

Range

1.1 Methods and techniques
Body language, aural, oral, eye contact.

1.2 Methods and techniques (in dealing with customers and their reactions)
Shock, anger, confusion, nervousness, frustration, none defensive, empathetic, eye contact, listening, politeness, none confrontational.

1.3 Ways of adapting their language (on technical subjects)
Speed, tone, clear.

1.4 Effective questioning techniques
Open and closed questions, control conversation and silences, repeat question.

1.5 Achieve customer satisfaction
Take ownership of their problem/issue, treat customer as an individual, deliver on promises, follow up call, letter, email, respect.

1.6 Resolving customer concerns and problems effectively (to maintain customer satisfaction and loyalty)
Trust in staff to deal with any problems or issues in a professional manner, customer feels valued, customer returns for more services, customer gives positive feedback about service.

1.7 Present themselves in a positive and professional manner
Smiling, politeness, smart appearance, speech, tone, speed, eye contact, posture, listening to customer requests attentiveness to customer needs.

1.8 Workplace requirements for personal appearance and conduct
Customer perceptions, professionalism, job role, manufacturer requirements, respect.

Unit 406 Knowledge in conducting diagnostic consultations with customers in motor vehicle environments

Supporting information

Guidance

1.1 Describe methods and techniques used to communicate effectively with customers and listen to their concerns

- Recognising the importance customer greetings
- Select an appropriate location to meet customers
- Use effective listening skills
- Use effective listening skills.

1.2 Describe different customer reactions and methods and techniques used to recognise and handle them effectively

- Anger
- Apprehension
- Confusion
- Frustration
- Nervousness
- Keep calm
- Take ownership
- Tone and speed of voice
- Eye contact.

1.3 Explain effective ways of adapting their language when explaining technical matters to customers:

- Provide factual information
- Speed of language
- Tone of language
- Keep explanations simple
- Refrain from using too much jargon.

1.4 Effective questioning techniques:

- Communication must be clear
- Appropriate tone of speech
- Appropriate pace of communication
- Open and closed questions
- Leading questions
- Repeating customer's responses.

1.5 Methods for effective customer satisfaction:

- Recognising the importance customer greetings
- Select an appropriate location to meet customers
- Take ownership of their problem or issue
- Treat as an individual
- Deliver on promises
- Follow up call, letter, e-mail, respect.

1.6 How resolving customer complaints helps to maintain customer loyalty:

- Trust of company
- Respect for staff
- Make customer feel valued
- Return for more services
- Word of mouth
- Satisfaction surveys.

1.7 Methods of presenting themselves in a positive and professional manner:

- Understand organisational requirements policy
- Uniform
- Body language
- Listening skills
- Smiling
- Posture
- Tend to customers' requirements.

1.8 Justify workplace requirements for personal appearance and conduct:

- Customer perceptions
- Acting in a professional manner
- Your job within the organisation
- Manufacturer standards in relation to dress
- Respect customers and colleagues.

Unit 411 Skills in providing technical support and advice to colleagues in motor vehicle environments

UAN:	H/502/6450
Level:	4
Credit value:	3
GLH:	23
Relationship to NOS:	This unit is linked to
Assessment requirements specified by a sector or regulatory body:	This unit was developed by the IMI, the sector skills council for the automotive retail industry. All assessments have been developed in accordance with the IMI Assessment Requirements for VRQs.
Aim:	This unit enables the learner to develop skills to enable them to provide a range of up-to-date technical support, information, advice, instruction and briefings to other workshop colleagues to support smooth workshop operation.

Learning outcome
The learner will:
1. Be able to provide technically accurate, up-to-date and accessible technical information to colleagues to support smooth workshop operation.
Assessment criteria
The learner can:
1.1   provide accessible, up-to-date vehicle technical information for workshop colleagues
1.2   establish and maintain procedures to check that colleagues have the correct technical resources to carry out their work effectively
1.3   establish and maintain procedures to correctly and promptly identify any additional resources required
1.4   establish and maintain procedures to give on-going technical advice to colleagues
1.5   respond to requests for technical help promptly and positively
1.6   ensure their support and advice is technically accurate and in-line with manufacturers instructions.

Learning outcome
The learner will:
2. Be able to provide clear instruction and demonstrations on technical information to colleagues to support smooth workshop operation.
Assessment criteria
The learner can:

2.1 provide colleagues with clear instruction on:
    a. product updates
    b. technical tasks
    c. what the results should be
    d. how they should perform tasks
    e. the standard must be achieved
2.2 deliver technical instruction and demonstrations in a manner and at a speed appropriate to the individual colleague concerned.

Learning outcome
The learner will:
3. Be able to check colleagues work, give effective and positive feedback and support in a cost effective manner.
Assessment criteria
The learner can:
3.1 select the most effective situation for giving support and advice to colleagues
3.2 check the work of colleagues at regular intervals and take prompt action to resolve problems
3.3 provide adequate time to consider feedback and give further explanation when appropriate, ensuring that colleagues have fully understood
3.4 identify and correct mistakes in a way that supports colleagues self confidence and offer praise when tasks are performed correctly
3.5 carry out checks in a cost effective and efficient manner.

Unit 411   Skills in providing technical support and advice to colleagues in motor vehicle environments

Supporting information

Assessment requirements

This unit must be assessed in accordance with the IMI Assessment Strategy and adhere to the Skills Unit Assessment Requirements developed for the unit, both of which can be downloaded from the **IMI** website

This unit is mapped to the IMI NOS MR15

This unit is supported by the IMI SSC.

Unit 412   Skills in providing diagnostic equipment and technical information system support in motor vehicle environments

UAN:	R/502/6458
Level:	4
Credit value:	3
GLH:	18
Relationship to NOS:	LV17 (a.) is covered in LV14 (Mandatory Units – LV14 to LV18)
Assessment requirements specified by a sector or regulatory body:	This unit was developed by the IMI, the sector skills council for the automotive retail industry. All assessments have been developed in accordance with the IMI Assessment Requirements for VRQs.
Aim:	This unit enables the learner to develop the skills required to carry out diagnostic consultations with customers including making recommendations to ensure the customers concerns are addressed and that the customer fully understands the problems with their vehicle.

Learning outcome
The learner will:
1. Be able to respond to customer concerns in a positive, effective and professional way.
Assessment criteria
The learner can:
1.1   respond to customer concerns in a positive, effective and friendly manner
1.2   give a positive and professional impression of themselves when dealing with customers
1.3   suggest possible methods to improve the customer care process where necessary.

Learning outcome
The learner will:
2. Be able to gather and record sufficient information to resolve customer concerns and problems.
Assessment criteria
The learner can:
2.1   effectively obtain sufficient, detailed information to resolve customer concerns and problems using suitably structured questioning
2.2   where appropriate, carry out a road test to obtain further detailed information and clarification of customers concerns
2.3   create customer consultation and repair records that are complete, accurate and in a suitable format which are signed by the customer where necessary.

Learning outcome
The learner will:
3. Be able to provide customers with accurate, current and relevant information, advice and guidance where appropriate.
Assessment criteria
The learner can:
3.1   provide customers with accurate, current and relevant advice and information on any further investigation(s) needed
3.2   clearly explain to customers the implications of any investigation(s) that may be needed
3.3   give customers technical advice and information accurately, clearly and in a form and manner that the customer will understand
3.4   provide customers with clear and relevant recommendations for the next course action
3.5   liaise with the customer and other relevant person(s) to agree the next course of action
3.6   clearly explain any action that has been taken to resolve their concerns and problems.

Unit 412 Skills in providing diagnostic equipment and technical information system support in motor vehicle environments

Supporting information

Assessment requirements

The assessment requirements are shown in full in the assessment documentation.

Unit 413   **Skills in liaising with vehicle product manufacturers and suppliers on technical matters**

UAN:	**Y/502/6459**
Level:	4
Credit value:	3
GLH:	18
Relationship to NOS:	This unit is linked to
Assessment requirements specified by a sector or regulatory body:	This unit was developed by the IMI, the sector skills council for the automotive retail industry. All assessments have been developed in accordance with the IMI Assessment Requirements for VRQs.
Aim:	This unit enables the learner to develop skills to obtain and provide information to and from manufacturers and suppliers for diagnostic activities, warranty activities, repairs and to support product development

Learning outcome
The learner will:
1. Be able to implement processes to ensure they are kept aware of current technical developments and information.
Assessment criteria
The learner can:
1.1   establish and maintain an on-going process for keeping aware of current technical developments and information for vehicles they work on.

Learning outcome
The learner will:
2. Be able to obtain and provide up-to-date, sufficient and detailed information to and from manufactures and suppliers.
Assessment criteria
The learner can:
2.1 provide information to manufacturers and suppliers at a suitable level of detail and in a form and manner that the recipient will accept and understand
2.2 collect sufficient and detailed information on the vehicle, the fault/problem and any action taken before contacting the manufacturer or supplier
2.3 submit requests for information from manufacturers and suppliers clearly and promptly
2.4 respond to requests for information from manufacturers and suppliers within specified timescales
2.5 pass on all information received from manufacturers and suppliers to the relevant person(s) promptly
2.6 ensure they seek assistance from manufacturers and suppliers only when prescribed diagnostic processes have failed.

Learning outcome
The learner will:
3. Be able to compile reports and report delays and quality issues to relevant persons in a prompt manner.
Assessment criteria
The learner can:
3.1 promptly report technical problems and quality issues in line with manufacturer and supplier requirements
3.2 promptly report any anticipated delays in obtaining or providing information to the relevant person(s)
3.3 provide reports and technical information that is complete, accurate and in a suitable format
3.4 can suggest methods for improving the reporting process
3.5 pass on all information received from manufacturers and suppliers to the relevant person(s) promptly
3.6 carry out reporting in an effective and efficient manner.

Unit 413 Skills in liaising with vehicle product manufacturers and suppliers on technical matters

Supporting information

Assessment requirements

This unit must be assessed in accordance with the IMI Assessment Strategy and adhere to the Skills Unit Assessment Requirements developed for the unit, both of which can be downloaded from the **IMI** website.

This unit is mapped to the IMI NOS MR16

This unit is supported by the IMI SSC.

Unit 414 **Skills in diagnosing motor vehicle faults where no prescribed process or format is available**

UAN:	H/502/6447
Level:	4
Credit value:	4
GLH:	34
Relationship to NOS:	This unit is linked to
Assessment requirements specified by a sector or regulatory body:	This unit was developed by the IMI, the sector skills council for the automotive retail industry. All assessments have been developed in accordance with the IMI Assessment Requirements for VRQs.
Aim:	This unit enables the learner to develop the skills to devise and implement strategies that provide the best course of action to enable accurate diagnosis and repair of faults when the application of standard manufacturer diagnostic procedures has failed to reveal the source and cause of problems.

Learning outcome
The learner will:
1. Be able to work safely when diagnosing faults where no prescribed process or format is available.
Assessment criteria
The learner can:
1.1 wear suitable personal protective equipment and use suitable vehicle coverings throughout all diagnostic related activities in the workshop
1.2 carry out all diagnostic activities following legislative and health and safety requirements
1.3 work in a way which minimises the risk of:
a. damage to other vehicle systems
b. damage to other components and units
c. contact with leakages
d. contact with hazardous substances
e. damage to diagnostic equipment.

Learning outcome
The learner will:
2. Be able to correctly identify the cause of faults using cost and time effective diagnostic procedures, methods and techniques where no prescribed process or format is available.

Assessment criteria
The learner can:
2.1 carry out diagnostic activities following industry procedures
2.2 confirm with all relevant people that all standard diagnostic procedures and techniques have been systematically and correctly applied to the vehicle prior to undertaking further work
2.3 use diagnostic methods which are relevant to the symptoms presented
2.4 apply the checks and tests that are most likely to be effective in revealing the cause of the fault
2.5 before undertaking further work, verify inconclusive results by analysing correctly:
a. all previous system fault information
b. results obtained
c. diagnostic test methods
2.6 assess accurately any dismantled sub-assemblies, components and units for condition and suitability for repair or replacement
2.7 correctly identify the cause or causes of faults
2.8 complete all system checks and tests in the most cost and time effective way for the fault presented
2.9 complete all diagnostic activities within the agreed timescale.

Learning outcome
The learner will:
3. Be able to select, use and calibrate appropriate diagnostic tools and equipment.

Assessment criteria
The learner can:
3.1 select and use suitable and appropriate tools and diagnostic equipment necessary for identifying the cause or causes of faults correctly
3.2 check equipment is calibrated to meet manufacturers' and legal requirements and are accurate to limits suitable and appropriate for any given diagnostic activity.

Learning outcome
The learner will: 4. Be able to collect and accurately record relevant diagnostic information and results.
Assessment criteria
The learner can: 4.1 collect diagnostic information in a systematic and structured way which progressively eliminates all possible causes of faults 4.2 liaise with vehicle and component manufacturers when appropriate to obtain up-to-date information, advice and guidance relevant to faults 4.3 collect sufficient diagnostic information to enable accurate diagnosis of faults 4.4 accurately identify and record any vehicle system deviation from manufacturers/acceptable limits 4.5 ensure the assessment of dismantled sub-assemblies, components and units identifies their condition and suitability for repair or replacement, accurately 4.6 ensure records are accurate, complete and passed to the relevant person(s) promptly in the format required.

Unit 414   Skills in diagnosing motor vehicle faults where no prescribed process or format is available

Supporting information

Assessment requirements

The assessment requirements are shown in full in the assessment documentation.

Unit 415 Skills in conducting diagnostic consultations with customers in motor vehicle environments

UAN:	**J/601/6262**
Level:	3
Credit value:	5
GLH:	40
Relationship to NOS:	This unit is linked to G3 Maintain Working Relationships in the Motor Vehicle Environment.
Assessment requirements specified by a sector or regulatory body:	This unit was developed by the IMI, the sector skills council for the automotive retail industry. All assessments have been developed in accordance with the IMI Assessment Requirements for VRQs.
Aim:	This unit will help the learner develop the skills required to keep good working relationships with all colleagues and customers in the automotive work environment by using effective communication and support.

Learning outcome
The learner will:
1. Be able to work effectively within the organisational structure of the automotive work environment.
Assessment criteria
The learner can:
1.1 respond promptly and willingly to requests for assistance from customers and colleagues
1.2 refer customers and colleagues to the correct person should requests fall outside their responsibility and capability.

Learning outcome
The learner will:
2. Be able to obtain and use information in order to support their job role within the automotive work environment.
Assessment criteria
The learner can:
2.1   select and use legal and technical information, in an automotive work environment.

Learning outcome
The learner will:
3. Be able to communicate with and support colleagues and customers effectively within the automotive work environment.
Assessment criteria
The learner can:
3.1   use methods of communication with customers and colleagues which meet their needs
3.2   give customers and colleagues accurate information
3.3   make requests for assistance from or to customers and colleagues clearly and courteously.

Learning outcome
The learner will:
4. Be able to develop and keep good working relationships in the automotive work environment.
Assessment criteria
The learner can:
4.1   contribute to team work by initiating ideas and co-operating with customers and colleagues
4.2   treat customers and colleagues in a way which shows respect for their views and opinions
4.3   make and keep achievable commitments to customers and colleagues
4.4   inform colleagues promptly of anything likely to affect their own work.

Unit 415 Skills in conducting diagnostic consultations with customers in motor vehicle environments

Supporting information

Assessment requirements

The assessment requirements are shown in full in the assessment documentation.

Unit 416   **Knowledge of liaising with vehicle product manufacturers and suppliers on technical matters**

UAN:	F/502/6455
Level:	4
Credit value:	5
GLH:	47
Relationship to NOS:	This unit is linked to the IMI NOS MR16
Assessment requirements specified by a sector or regulatory body:	This unit must be assessed in accordance with the IMI Assessment Strategy and adhere to the knowledge unit syllabus, both of which can be downloaded from the **IMI** website. This unit is supported by the IMI SSC
Aim:	The learner will to develop their knowledge of liaising with vehicle product manufacturers, suppliers and customers on technical matters when working in an automotive environment. This will enable them to provide a range of up-to-date technical support, information and advice to support an efficient workshop operation.

Learning outcome
The learner will:
1. Understand how to communicate effectively with manufacturers, suppliers, managers, colleagues and customers.
Assessment criteria
The learner can:

1.1 describe effective **communication techniques, methods and procedures** to obtain and provide information from:
    a. manufacturers
    b. suppliers
    c. managers
    d. colleagues
    e. customers

1.2 justify when it is appropriate to contact manufacturers or suppliers on **technical matters**
1.3 differentiate between the **limits of their authority** and of other designated personnel when liaising with manufacturers or suppliers on technical matters
1.4 describe their **workplace procedures** for gaining up to date technical information and repair methods.

Range

1.1 Communication techniques, **methods and procedures**
    a. Communication methods:
        -   visual (notice boards, posters, presentations)
        -   aural
        -   oral (meetings)
        -   postal
    b. Communication techniques:
        -   body language
        -   listening skills
        -   tone and speed of speech
    c. Methods and procedures:
        -   Electronic
        -   Telephone
        -   face to face.
 	
1.2 Technical matters
Diagnostic procedures, technical updates, product failure, warranty.
 	
1.3 Limits of their authority
Areas of responsibility, technical expertise.
 	
1.4 Workplace procedures
Lines of communication.

Learning outcome
The learner will: 2. Understand how to access reporting systems, compile reports and process information.

Assessment criteria
The learner can: 2.1   explain how to access **reporting systems** on which they work 2.2   describe efficient **methods and procedures for processing information and compiling reports**.

Range
2.1 Reporting systems Electronically, paper based, company policies and procedures. **2.2 Methods and procedures for processing information and compiling reports** Timescales, lines of communication, formats, company policies and procedures.

Unit 416   Knowledge of liaising with vehicle product manufacturers and suppliers on technical matters

Supporting information

Guidance

1.1 Communication techniques, methods and procedures:
- Face to face
- Telephone
- E-mail
- Body language
- Respond appropriately and effectively
- Use effective listening skills
- Distinguish facts from non facts
- Avoid confrontations
- Be empathetic
- Be non defensive
- Use of technical terminology
- Appropriate tone of speech
- Appropriate speed of communication when dealing with different people (ie deaf, none English speaking).

1.2 Technical Matters:
- Product updates
- Warranty claims
- Product clarification on user issues
- Product development
- Technical clarification
- Product health and safety policies.

1.3 Limits of authority:
- Understand your own organisational and job role requirements
- Understand organisational personnel structure and their job role
- Understand your own knowledge and awareness of manufacturer's, suppliers, products.

1.4 Workplace procedures:
- Understand your company procedure of who gathers information
- E-mail
- Websites
- Filing systems, electronic, paper.

2.1 How to access reporting systems:

- Understand company policies and procedures on access and reporting systems
- Reporting and information systems are:
  - paper based, filing systems, technical bulletins
  - computer based, websites, electronic files.

2.2 Methods and procedures for processing information and compiling reports:

- Paper based
- Computer based
- Comply with company health and safety, data and copyrights policies
- Understand how to process reports adhering to company policies
- Understand your own organisational and job role requirements
- Be aware of timescales to compile reports.

Unit 417   Project management

UAN:	T/504/1129
Level:	4
Credit value:	15
GLH:	50
Relationship to NOS:	This unit is linked to the Business and Administration NOS, BAA151 and BAA152.
Endorsement by a sector or regulatory body:	This unit is endorsed by the Council for Administration.
Aim:	The purpose of this unit is to enable learners to develop an understanding of the principles of project management and how projects are set up. Learners will gain an understanding of how to mitigate for risks and develop their skills in using management tools to monitoring and reviewing projects.

Learning outcome
The learner will:
1.   Understand why organisations use project management.
Assessment criteria
The learner can:
1.1   describe the **principles** of project management
1.2   explain the **benefits** of project management to organisations and individuals.

Range
Principles
Business justification, learning from experience, defined roles and responsibilities, manage by stages, manage by exception, focus on products, objectives, constraints, lifecycle.
Benefits
Possible benefits will include: Increased efficiency, improved customer satisfaction, organisations may be more effective in delivering services, improvements in quality and output, development opportunities within the project team, increase in an organisation's competitive edge, opportunities to expand services, more flexibility, improved risk assessment.

Learning outcome
The learner will:
2. Understand how to set up projects.

Assessment criteria
The learner can:
2.1 explain the **considerations** when reviewing project proposals
2.2 explain **how to set clear goals** for projects
2.3 analyse project **resource requirements**
2.4 explain **how roles and responsibilities are allocated** within project teams
2.5 identify project **communication needs**
2.6 assess **possible risks** to successful completion of projects
2.7 explain how to **mitigate** for possible risks.

Range
2.1 Considerations Financial viability of the project, time, legal, resource, budget, constraints, dependencies, confidentiality eg restrictions in relation to the Data Protection Act, who has access to data and project documentation. **2.2 How to set clear goals** Identify stakeholders, identify needs, use SMART principles, record goals in project plans. **2.3 Resource requirements** Project requirements against goals, time constraints, budget, human resources, training needs, communication needs, IT requirements. **2.4 How roles and responsibilities are allocated** Use of experts from different areas of the organisation, use of key stakeholders, identify training needs, meeting schedules, timing of reports. **2.5 Communication needs** Formal/informal communication, identifying who requires communication eg stakeholders, management, team members. **2.6 Possible risks** Safety issues, optimistic time and cost estimates, unexpected budget costs, unclear roles and responsibilities, stakeholder needs not sought, changing requirements after the start of the project, new requirements, poor communication, lack of commitment. **2.7 Mitigate** Health and safety training, regular project review meetings, appropriate communication, training and monitoring.

Learning outcome
The learner will:
3. Be able to use management tools to maintain, control and monitor projects.
Assessment criteria
The learner can:
3.1 describe different **management tools** for monitoring and control of projects
3.2 justify the use of management tools for monitoring and controlling Projects
3.3 use management tools to **monitor** projects.

Range
3.1 Management tools Progress reports, budget monitoring reports, GANTT charts, Critical Path Analysis, use of relevant and current project software packages. **3.3 Monitor** Updating task status, re-scheduling uncompleted tasks, updating project elements.

Learning outcome
The learner will:
4. Be able to review projects at all stages.
Assessment criteria
The learner can:
4.1 explain **reasons** for reviewing projects after completion
4.2 review projects against original proposals.

Range
4.1 Reasons Improve future projects, enables ability to learn from experience, identify key resources for future projects, ensures comparison against achievements to original objectives, highlights any issues eg health and safety, problems, training needs, shortages in terms of resources, increases in costs, allows for the ability to revise and update plans, enables completion of an end of project report.

Appendix 1   Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to the **Centres and Training Providers homepage** on **www.cityandguilds.com**.

Centre Manual - Supporting Customer Excellence contains detailed information about the processes which must be followed and requirements which must be met for a centre to achieve 'approved centre' status, or to offer a particular qualification, as well as updates and good practice exemplars for City & Guilds assessment and policy issues. Specifically, the document includes sections on:

- The centre and qualification approval process
- Assessment, internal quality assurance and examination roles at the centre
- Registration and certification of candidates
- Non-compliance
- Complaints and appeals
- Equal opportunities
- Data protection
- Management systems
- Maintaining records
- Assessment
- Internal quality assurance
- External quality assurance.

Our Quality Assurance Requirements encompasses all of the relevant requirements of key regulatory documents such as:

- Regulatory Arrangements for the Qualifications and Credit Framework (2008)
- SQA Awarding Body Criteria (2007)
- NVQ Code of Practice (2006)

and sets out the criteria that centres should adhere to pre and post centre and qualification approval.

Access to Assessment & Qualifications provides full details of the arrangements that may be made to facilitate access to assessments and qualifications for candidates who are eligible for adjustments in assessment.

The **centre homepage** section of the City & Guilds website also contains useful information on such things as:

- **Walled Garden:** how to register and certificate candidates on line
- **Qualifications and Credit Framework (QCF)**: general guidance about the QCF and how qualifications will change, as well as information on the IT systems needed and FAQs
- **Events**: dates and information on the latest Centre events
- **Online assessment**: how to register for e-assessments.

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Useful contacts

UK learners **General qualification information**	**T: +44 (0)844 543 0033** **E: learnersupport@cityandguilds.com**
International learners General qualification information	T: +44 (0)844 543 0033 F: +44 (0)20 7294 2413 E: **intcg@cityandguilds.com**
Centres Exam entries, Certificates, Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 E: **centresupport@cityandguilds.com**
Single subject qualifications Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 F: +44 (0)20 7294 2404 (BB forms) E: **singlesubjects@cityandguilds.com**
International awards Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 E: **intops@cityandguilds.com**
Walled Garden Re-issue of password or username, Technical problems, Entries, Results, e-assessment, Navigation, User/menu option, Problems	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 E: **walledgarden@cityandguilds.com**
Employer Employer solutions, Mapping, Accreditation, Development Skills, Consultancy	T: +44 (0)121 503 8993 E: **business@cityandguilds.com**
Publications Logbooks, Centre documents, Forms, Free literature	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413

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