INSTITUTE OF THE MOTOR INDUSTRY

IMI QUALIFICATION

Assessment Criteria

for

IMI Level 3 Diploma in Construction Plant or Machinery Maintenance (Construction)

I.D: 601/3092/1

To be used in conjunction with Learner Guidance, Candidate Assessment Summary, Practical Assessments and Written Assessments

For assessor use only: Assessor Verifier Guidance

01-09-2014 / Version 2

CENTRE INFORMATION

Please be aware that any **legislation** referred to in this qualification may be subject to amendment/s during the life of this qualification. Therefore IMI Approved Centres must ensure they are aware of and comply with any amendments, e.g. to health and safety legislation and employment practices.

Please be aware that **vehicle technologies** referred to in this qualification reflect current practice, but may be subject to amendment/s, updates and replacements during the life of this qualification. Therefore IMI Approved Centres must ensure they are aware of the latest developments and emerging technologies to ensure the currency of this qualification.

Please note: the relevance of the information contained in the **unit content** will vary depending upon the vehicle types being worked upon. The unit content is for guidance only and is not meant to be prescriptive.

CONTACT SHEET

Learner Name:	
Learner Registration No:	
Learner Address:	
Learner Tel No:	
Learner Email:	
Employer Contact:	
Employer Name & Address:	
Employer Tel No:	

Please complete as appropriate:	
Witness Name:	Witness Name:
Witness Job Title:	Witness Job Title:
Witness Signature:	Witness Signature:
Witness Name:	Witness Name:
Witness Job Title:	Witness Job Title:
Witness Signature:	Witness Signature:
Assessor Name:	Assessor Name:
Assessor Signature:	Assessor Signature:
Assessor Name:	
Assessor Signature:	
Internal Verifier Name:	Internal Verifier Name:
Internal Verifier Signature:	Internal Verifier Signature:

IMI Level 3 Diploma in Construction Plant or Machinery Maintenance (Construction) I.D. No: 601/3092/1

In order to achieve the qualification, learners must achieve a minimum of 68 credits from the following groups:

Group A: A minimum of 68 credits must be achieved

A Minimum of 51 credits to be achieved at, or above, the level of the qualification

Note: Assessments
The assessments for this qualification combine various assessment styles/methodologies in order to suit the levels of units contained within it.
The table below clarifies what IMI assessments are available for each unit.

The key below details the style of assessment/s:
W = Written Assessments
P = Practical Assessments
T = On-line tests

Group A Mandatory Units

Unit Ref:	Unit Title and ID Number	GLH	Unit Level	Credit Value	Assessments		
					P	W	T
CPM04	Operate Plant Or Machinery For Non-Operational Maintenance Activities (J/505/3849)	20	2	2	M		M (20)
CPM10	Produce One-Off Components By Bench Fitting Techniques (H/505/3857)	40	2	4	M		M (20)
CPM11	Install Plant Or Machinery (K/505/3858)	20	2	2	M		M (20)
CPM13	Configure And Hand Over Plant Or Machinery (K/505/3861)	30	2	3	M	M	
CPM14	Thermal Cutting And Joining Materials (M/505/3862)	60	2	6	M		M (20)
CPM15	Manage Work Activities And Resources (K/503/4291)	50	3	5		M	
CPM16	Develop And Maintain Good Working Relationships (T/503/4276)	50	3	5	M	M	
CPM17	Confirm The Occupational Method Of Work (Y/503/4254)	50	3	5		M	
CPM18	Diagnose Faults In Plant Or Machinery (T/505/3863)	50	3	5	M		M (20)
CPM19	Plan And Carry Out Servicing To Maintain Plant Or Machinery (A/505/3864)	100	3	10	M		M (20)
CPM20	Advise On Repair Or Replacement For Plant Or Machinery (F/505/3865)	180	3	18	M	M	
CPM21	Provide Users Of Plant Or Machinery With Technical Information, Advice And Guidance (J/505/3866)	30	3	3	M	M	

UNIT REF: CPM04	UNIT TITLE: OPERATE PLANT OR MACHINERY FOR NON-OPERATIONAL MAINTENANCE ACTIVITIES

Level: 2	Credit Value: 2	GLH: 20
Mapping: This unit is mapped to COSVR659 – Operate plant or machinery for non-operational activities		
Rationale: This unit illustrates the skills, knowledge and understanding required to be deemed trained to operate plant or machinery for non-operational maintenance activities. Learners will undertake preparation activities before operating plant or machinery.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to prepare for operating plant or machinery for non-operational maintenance activities	1.1 Identify the specific plant or machinery to be operated from drawings, specifications, schedules, method statements, user manuals, manufacturers' information, current regulations 1.2 Outline the human resources and skills required for the work 1.3 Outline procedures for liaising with others when assistance is required 1.4 Outline relevant current legislation, Approved Codes of Practice and official guidance relating to safely operating plant or machinery for non-operational maintenance activities 1.5 List the health and safety control equipment, materials, components, consumables and equipment required 1.6 Outline organisational procedures for reporting inappropriate information and resources, emergencies and accidents 1.7 Describe the purpose of protection and how to protect the work and surrounding area from damage/contamination 1.8 Outline the procedures and safety precautions relating to the specific plant or machinery being operated 1.9 Identify capabilities, characteristics and limitations of different types of plant and machinery

2. Be able to prepare for operating plant or machinery for non-operational maintenance activities	2.1 Liaise and plan the work with others 2.2 Select the health and safety control equipment, materials, components, consumables and equipment required 2.3 Protect the work and surrounding area from damage/contamination 2.4 Confirm the plant or machinery to be operated from the information provided
3. Know how to operate plant or machinery for non-operational maintenance activities	3.1 Describe pre-use, pre-start and pre-movement checks to plant or machinery 3.2 Describe how to manoeuvre and position the following types of plant or machinery: a. tracked b. wheeled c. self-propelled roller 3.3 Outline methods and procedures for operating plant or machinery within operational limitations 3.4 Identify the British Standards signals and instructions to follow when operating plant or machinery 3.5 Describe how to prepare plant or machinery for transportation 3.6 Outline procedures for reporting and recording findings
4. Be able to operate plant or machinery for non-operational maintenance activities	4.1 Complete pre-use, pre-start and pre-movement checks on plant or machinery 4.2 Manoeuvre and position plant or machinery 4.3 Operate plant or machinery within operational limitations and to give working instructions 4.4 Follow British Standards signals and instructions 4.5 Shut down, park and secure plant or machinery after completing the task 4.6 Prepare plant or machinery for transportation 4.7 Complete the operation in accordance with safe working practices and within the allocated time 4.8 Record findings in the appropriate format and report to the relevant individual(s)

Content:

1.1 Sources of information relating to operational requirements:
drawings, specifications, method statements, risk assessments, user manuals, manufacturers' information, current regulations governing the operation of plant and machinery

1.2 Resources and skills requirement:
the characteristics, quality, uses, sustainability and limitations associated with plant resources and how the resources should be used; the organisational procedures to select resources. The skills required to operate plant equipment.

1.3 Liaising with others:
this relates to team work, communication, meeting the needs of other occupations associated with operating plant and machinery for non-operational activities, problem solving arising from information, resources and methods of work, own authority.

1.4 Legislation, Approved Codes of Practice and official guidance:
this relates to the operative's responsibilities regarding potential accidents and health hazards whilst working in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.

1.5 Health and Safety control equipment:
identified by the principles of protection for occupational use, types and purpose of each type, work situations and general work environment: collective protective measures, personal protective equipment (PPE), respiratory protective equipment (RPE), local exhaust ventilation (LEV)
Resources:
materials, components and equipment relating to types. quantity, quality, sizes and the sustainability of standard and/or specialist; consumables, fluids, fuels, lubricants, coolants, drive belts, bulbs, fuses, fastenings, nuts, bolts, pins, clips, hand tools, portable powered tools and equipment.

1.6 Emergencies:
responsibilities for reporting situations in accordance with organisational authorisation and personal skills when involved with: fire, spillage. Injury, emergencies relating to occupational activities, inappropriate information, lack of resources.

1.7 The purpose of protection:
how to protect the work and surrounding area against damage from general workplace activities, other occupations and contamination.

1.8 Safety procedures and precautions:
risk assessments, leaflets, the health and safety culture e.g. human factors; attitude, motivation, perception, competence, health and safety training.

1.9 Capabilities, characteristics and limitations:
identify capabilities, characteristic and limitations of plant equipment (ride on and remote control) including hand-operated power tools, static machinery, pedestrian controlled equipment. wheeled and tracked plant, rollers.

3.1 Prepare plant equipment for operation:
methods of completing, pre-use, pre-start and pre-movement checks, consider the area available for the movements required (height restrictions, obstructions, overhead and underground obstructions, services, ventilation and point loading).

Content:

3.2 Manoeuvre and position plant and machine:
methods of manoeuvring plant equipment (tracked, wheeled and self-propelled rollers) on slopes and inclines, uneven terrain, rough terrain, un-compacted ground. areas with restricted clearances and areas where there is other vehicle and pedestrian traffic , shut down, park, secure and immobilise.

3.3 Procedures for operating plant equipment:
procedures for operating plant equipment (tracked, wheeled and self-propelled rollers) on slopes and inclines, uneven terrain, rough terrain, un-compacted ground. areas with restricted clearances and areas where there is other vehicle and pedestrian traffic, shut down, park, secure and immobilise.

3.4 British Standards signals:
HSE document hsg144 paragraph 52 or BS ISO 23853:2004

3.5 Preparing for transportation:
Organisational procedure for transporting plant equipment, fluid levels, attachments, additional buckets, safety locking devices and compliance with the road traffic act.

3.6 Record keeping:
organisational procedures and statutory requirements relating to recording and processing information.

CPM04 Evidence Required

You must be observed by your assessor successfully operating **at least 1 item** of plant or machinery on **at least 1 occasion.**

Task Number	Task Description	Observation
1	Operate Tracked Plant	
2	Operate Wheeled Plant	
3	Operate A Self-Propelled Roller	

CMP04 Evidence Required

You must be observed by your assessor successfully carrying out **all 8** of the specific tasks listed on **at least 1 occasion.**

Specific Tasks to Cover	Observation
Complete pre-use check	
Complete pre-start check	
Complete pre-movement check	
Manoeuvre and position plant or machinery	
Operate plant or machinery within operational limitations	
Follow British Standard signals and instructions	
Shut down, park and secure plant or machinery	
Prepare plant or machinery for transportation	

UNIT REF: CPM10	UNIT TITLE: PRODUCE ONE-OFF COMPONENTS BY BENCH FITTING TECHNIQUES

Level: 2	Credit Value: 4	GLH: 40
Mapping: This units is mapped to COSVR666 – Produce one-off components to restore or maintain the operational functions of plant or machinery		
Rationale: This unit illustrates the skills, knowledge and understanding required to be deemed trained to produce one-off components by bench fitting techniques. Learners will undertake preparation activities before producing one-off components and carrying out completion activities on conclusion of the work.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to prepare for producing one-off components by bench fitting techniques	1.1. Identify the one-off components required from drawings, specifications, schedules, method statements, workshop manuals, parts manuals, manufacturers' information, current regulations 1.2. Outline relevant current legislation and official guidance relating to safely producing one-off components by bench fitting techniques 1.3. List the health and safety control equipment, materials, components, consumables and equipment required 1.4. Outline organisational procedures for reporting inappropriate information and resources, emergencies and accidents 1.5. Describe the purpose of protection and how to protect the work and surrounding area from damage/contamination 1.6. Outline the procedures and safety precautions relating to the specific components being produced 1.7. Describe how to identify requirements for one-off components and how the work should be carried out
2. Be able to prepare for producing one-off components by bench fitting techniques	2.1. Confirm the one-off components required from the information provided 2.2. Select the health and safety control equipment, components, consumables and equipment required 2.3. Protect the work and surrounding area from damage/contamination 2.4. Identify requirements for one-off components 2.5. Confirm how the work will be carried out

3. Know the procedures for producing one-off components by bench fitting techniques	3.1. Describe how to: a. transfer dimensions and measurements b. produce templates c. work from representative work pieces and components 3.2. Describe the characteristics of materials and differing mating surfaces 3.3. Describe the appropriate bench fitting techniques for producing one-off components to given working instructions
4. Be able to follow procedures to produce one-off components by bench fitting techniques	4.1. Transfer dimensions and measurements 4.2. Work from templates/drawings, representative work pieces and components 4.3. Confirm the characteristics of materials and differing mating surfaces 4.4. Produce one-off components to given working instructions using bench fitting techniques
5. Know how to complete activities after producing one-off components by bench fitting techniques	5.1. Outline procedures for recovering and storing reusable materials and components 5.2. Outline procedures for completing and maintaining records of the work 5.3. Describe how to dispose of hazardous and non-hazardous waste in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations, official guidance
6. Be able to complete activities after producing one-off components by bench fitting techniques	6.1. Recover and store reusable materials and components 6.2. Complete and maintain records of the work in the appropriate format 6.3. Dispose of hazardous and non-hazardous waste in accordance with relevant documentation

Content:

1.1 **Sources of information relating to the production of one off components:**
drawings, specifications, method statements, risk assessments, user manuals, manufacturers' information, current regulations governing the production of one off components for plant equipment.

1.2 **Legislation, Approved Codes of Practice and official guidance:**
this relates to the operative's responsibilities regarding potential accidents and health hazards whilst working in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.

1.3 **Health and Safety control equipment:**
identified by the principles of protection for occupational use, types and purpose of each type, work situations and general work environment; collective protective measures, personal protective equipment (PPE), respiratory protective equipment (RPE), local exhaust ventilation (LEV)
Resources:
materials, components and equipment relating to; types, quantity, quality, sizes and the sustainability of standard and/or specialist; lifting accessories, fastening, fixings, consumables, hand tools, portable powered tools and equipment.

1.4 **Emergencies:**
responsibilities for reporting situations in accordance with organisational policies and procedures and personal skills when involved with: fire, spillage, injury, emergencies relating to occupational activities, inappropriate information, lack of resources.

1.5 **The purpose of protection:**
how to protect the work and surrounding area against damage from general workplace activities, other occupations and contamination.

1.6 **Safety procedures and precautions:**
risk assessments, leaflets, the health and safety culture e.g. human factors; attitude, motivation, perception, competence, health and safety training.

1.7 **Identify the requirements for one-off components:**
assess requirements for repair or maintenance, validate appropriate ways in which the work should be carried out, maintain the principles of minimum intervention and reversible alteration, determine the durability of the one off component (temporary or permanent).

3.1 **How to interpret engineering drawings:**
to include; different views and projections, symbols, scales, datum points, line types. How to transfer dimensions, measurements (hole location and spacing), fits and tolerance, produce templates, work from patterns, components and their representative work pieces, tools for marking components to include; engineers blue, templates, jigs, surface table, Vernier height gauge, angle block, scriber, centre punch, datum lines, squares.

3.2 **Characteristics of materials:**
to include; metallic, non-metallic, ferrous metals, non-ferrous metals, strength, ductility, malleability, hardness, toughness, brittleness', elasticity, plasticity, conductivity, cast iron, steel, alloy, plastic.

3.3 **Bench fitting techniques:**
to include; shaping, cutting, drilling, filing, cutting threads (internal and external), fabrication, welding, machining, grinding, hot and cold bending, cutting to pattern. Methods of securing to include; bolts, screws, clamps, rivets, joints (thermal and adhesive) and specialist retaining devices (circlips, cotter pins, woodruff keys).

Content:

5.1 Recover and store materials:
methods of recovering materials, off cuts, reusing, recycling and how to store reusable materials and components, suitability of racking, manual handling.

5.2 Record keeping:
organisational procedures and statutory requirements relating to recording and processing information.

5.3 Hazardous and non-hazardous waste:
the environmental responsibilities, organisational procedures, manufacturers' understanding information, statutory regulations and official guidance relating to disposal.

CPM10 Evidence Required

You must be observed by your assessor successfully carrying out **both** components on **at least 1 occasion**

Task Number	Task Description	Observation
1	Produce a Component	
2	Repair a Component	

CPM10 Evidence Required

You must be observed by your assessor successfully carrying out **all 5** of the specific tasks listed on **at least 1 occasion.**

Specific Tasks to Cover	Observation
Transfer dimensions and measurements	
Work from templates/drawings	
Select appropriate materials with the requires characteristics	
Recover and store reusable materials and components	
Correctly dispose of hazardous and non-hazardous waste	

UNIT REF: CPM11	UNIT TITLE: INSTALL PLANT OR MACHINERY

Level: 2	Credit Value: 2	GLH: 20
Mapping: This unit is mapped to COSVR667 – Install plant or machinery for operational activities		
Rationale: This unit illustrates the skills, knowledge and understanding required to be deemed trained to install plant or machinery. Learners will undertake preparation activities before installing plant or machinery. They will then carry out completion activities on conclusion of the work.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to prepare for installing plant or machinery	1.1. Identify the installation required from drawings, specifications, schedules, method statements, installation manuals, manufacturers' information, current regulations 1.2. Outline relevant current legislation and official guidance relating to safely installing plant or machinery 1.3. List the health and safety control equipment, materials, components consumables and equipment required 1.4. List the parts, components, attachments and accessories required to complete the installation 1.5. Outline organisational procedures for reporting inappropriate information and resources, emergencies and accidents 1.6. Describe the purpose of protection and how to protect the work and surrounding area from damage/contamination 1.7. Outline the procedures and safety precautions relating to the specific plant or machinery being installed
2. Be able to prepare for installing plant or machinery	2.1. Confirm the plant or machinery to be installed from the information provided 2.2. Select the health and safety control equipment, materials, components, consumables and equipment required 2.3. Select the parts, components, attachments and accessories required to complete the installation 2.4. Protect the work and surrounding area from damage/contamination

3. Know how to install plant or machinery	3.1. Describe methods of installing plant or machinery to given working instructions using the following as required: a. winches b. hoists c. pulley and chain blocks d. skids e. mechanical/hydraulic jacks f. wire/fabric ropes g. powered manual cranes (not requiring operator certification) h. pull lifts 3.2. Describe how to operate and control lifting equipment and lifting aids (not requiring operator certification) 3.3. Outline methods and procedures for completing the installation 3.4. Describe how to make adjustments to ensure optimum operational performance 3.5. Outline methods and procedures for dealing with damage or defects occurring during installation 3.6. Outline the functional and safety checks to complete to ensure the installation meets quality expectations
4. Be able to install plant or machinery	4.1. Install plant or machinery to given working instructions 4.2. Operate and control lifting equipment and lifting aids (not requiring operator certification) 4.3. Complete the installation using appropriate methods and procedures 4.4. Make adjustments to ensure optimum operational performance 4.5. Deal with damage or defects occurring during installation 4.6. Perform functional and safety checks to ensure the installation meets quality expectations 4.7. Use hand tools, portable powered tools, powered tools and equipment and access equipment as required 4.8. Install plant or machinery in accordance with safe working practices and within the allocated time

5. Know how to complete activities after installing plant or machinery	5.1 Outline procedures for completing and maintaining records 5.2 Describe how to dispose of hazardous and non-hazardous waste in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations, official guidance
6. Be able to complete activities after installing plant or machinery	6.1 Complete and maintain records of the work in the appropriate format 6.2 Dispose of hazardous and non-hazardous waste in accordance with relevant documentation

Content:

1.1 **Sources of information relating to installation requirements:**
drawings, specifications, method statements, risk assessments, user manuals, manufacturers' information, current regulations governing the installation of plant and machinery.

1.2 **Legislation, Approved Codes of Practice and official guidance:**
this relates to the operative's responsibilities regarding potential accidents and health hazards whilst working in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.

1.3 **Health and Safety control equipment:**
identified by the principles of protection for occupational use, types and purpose of each type, work situations and general work environment: collective protective measures, personal protective equipment (PPE), respiratory protective equipment (RPE), local exhaust ventilation (LEV)
Resources:
materials, components and equipment relating to; types, quantity, quality, sizes and the sustainability of standard and/or specialist; lifting accessories, fastening, ties, anchors, fixings, consumables, measuring, levelling, hand tools, portable powered tools and equipment.

1.4 **Components required for installation:**
types of equipment and components: passenger and goods hoists, piling and drilling rigs, excavation plant or machinery, batching plants, crushing and screening plants, power generation equipment, pumps, climate management machines; fastening, ties, anchors, fixings, consumables, measuring, levelling, hand tools, portable powered tools and equipment.

1.5 **Emergencies:**
responsibilities for reporting situations in accordance with organisational policies and procedures and personal skills when involved with: fire, spillage. Injury, emergencies relating to occupational activities, inappropriate information, lack of resources.

1.6 **The purpose of protection:**
how to protect the work and surrounding area against damage from general workplace activities, other occupations and contamination.

1.7 **Safety procedures and precautions:**
risk assessments, leaflets, the health and safety culture e.g. human factors; attitude, motivation, perception, competence, health and safety training.

Content:

3.1 Site and equipment requirements:
to include: assessing the suitability of site conditions: site layout, location, availability of space, levels, prevailing weather, conditions, power supplies, Health and Safety. How to install using; winches, hoists, pulley and chain blocks, skids, mechanical/hydraulic jacks, wire/fabric ropes, powered manual cranes (not requiring operator certification), pull lifts.

3.2 Operate and control lifting aids:
the area available for the lift, movements required (height restrictions, obstructions, overhead and underground obstructions, services, ventilation and point loading), completing, pre-use, pre-start checks on equipment to include; winches, hoists, pulley and chain blocks, skids, mechanical/hydraulic jacks, wire/fabric ropes, powered manual cranes (not requiring operator certification), pull lifts.

3.3 Methods of installing plant equipment:
the resources required for the installation task, confirm parts; components, attachments, accessories are available to complete the installation, secure components for: movement, lifting, align, attach (tied in. pinned, damped, bolted and screwed), fixing equipment to load bearing structures, install and test anchors and ties, route, lay, connect and secure cables, pipes and hoses, connect power supplies.

3.4 Procedures for making adjustments:
to ensure optimum operational function.

3.5 Procedures for deal with damages and defects:
unexpected issues arising from; misaligned components, cracked casings and housings, leaks, scoring, marking of components and breakages, liaise with client, customer or their representatives.

3.6 Functional and safety checks:
methods to confirm installation functionality and safety meets expectations, compare and confirm operational outcome with given specifications, make comparisons with other plant equipment, consider previous knowledge, apply sensory abilities, (visual, audible, touch and smell) consult manufacturers' information.

5.1 Record keeping:
organisational procedures and statutory requirements relating to recording and processing installation information.

5.2 Hazardous and non-hazardous waste:
the environmental responsibilities, organisational procedures, manufacturers' understanding information, statutory regulations and official guidance relating to disposal.

CPM11 Evidence Required **You must** be observed by your assessor successfully installing plant or machinery on **at least 1 occasion**		
Task Number	**Task Description**	**Observation**
1	Install Plant or Machinery	

CPM11 Evidence Required **You must** be observed by your assessor successfully carrying out **all 6** of the specific tasks listed on **at least 1 occasion.**	
Specific Tasks to Cover	**Observation**
Select the required parts, components, consumables and equipment	
Operate and control lifting equipment and lifting aids	
Make adjustment to ensure optimum operational performance	
Perform a functional check	
Perform a safety check	
Correctly dispose of hazardous and non-hazardous waste	

UNIT REF: CPM13	UNIT TITLE: CONFIGURE AND HAND OVER PLANT OR MACHINERY

Level: 2	Credit Value: 3	GLH: 30
Mapping: This unit is mapped to COSVR669 – Configure plant or machinery for specific operational activities and COSVR672 – Hand over plant or machinery to the control of others		
Rationale: This unit illustrates the skills, knowledge and understanding required to be deemed trained to configure and hand over plant or machinery. Learners will undertake preparation activities before configuring and handing over plant or machinery.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to prepare for configuring and handing over plant or machinery	1.1. Identify the configuration required and handover procedures from drawings, specifications, schedules, method statements, risk assessments, workshop manuals, technical service bulletins, parts manuals, manufacturers' information, current regulations 1.2. Outline relevant current legislation and official guidance relating to safely configuring and handing over plant or machinery 1.3. List the health and safety control equipment, materials, components, consumables and equipment required 1.4. Outline the documentation required to complete the hand over 1.5. Outline organisational procedures for reporting inappropriate information and resources, emergencies and accidents 1.6. Describe the purpose of protection and how to protect the work and surrounding area from damage/contamination 1.7. Outline the procedures and safety precautions relating to the materials, components and equipment being used and the specific plant or machinery being configured and handed over

2. Be able to prepare for configuring and handing over plant or machinery	2.1. Confirm the plant or machinery to be configured and handed over from the information provided 2.2. Select the health and safety control equipment, materials, components, consumables, equipment and documentation required 2.3. Protect the work and surrounding area from damage/contamination
3. Know how to configure and hand over plant or machinery	3.1. Describe how to configure plant or machinery to given working instructions 3.2. Describe required parameters for plant or machinery 3.3. Describe the functional, operational and safety checks to complete on configured plant or machinery 3.4. Describe how to assess the suitability of conditions for handing over 3.5. Outline procedures for assessing and confirming the condition of plant or machinery 3.6. Outline the supporting information available to operators and users 3.7. Define the moment of transferred responsibility 3.8. Describe how to dispose of hazardous and non-hazardous waste in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations, official guidance
4. Be able to configure plant or machinery	4.1. Configure plant or machinery to given working instructions 4.2. Use hand tools, portable power tools and ancillary equipment and access equipment as required 4.3. Check the required parameters for plant or machinery are achieved 4.4. Complete functional, operational and safety checks on configured plant or machinery 4.5. Assess and confirm the condition of plant or machinery 4.6. Complete the configuration and hand over in accordance with safe working practices and within the allocated time

5. Be able to hand over plant or machinery	5.1 Assess the suitability of conditions for hand over 5.2 Explain and demonstrate the operation of plant or machinery to others to given working instructions 5.3 Use hand tools, portable power tools and ancillary equipment and access equipment as required 5.4 Communicate the moment of transferred responsibility 5.5 Complete the hand over by completing relevant documentation 5.6 Provide details of the supporting information available 5.7 Complete the hand over in accordance with safe working practices and within the allocated time 5.8 Dispose of hazardous and non-hazardous waste in accordance with relevant documentation

Content:

1.1 Sources of information relating to the configuration and handover requirements:
drawings, specifications, schedules, workshop manuals, parts manuals, service bulletins, electronic data, method statements, risk assessments, manufacturer's information and current regulations associated with the configuration and handover of plant equipment components.

1.2 Legislation and official guidance:
this relates to the operative's responsibilities regarding potential accidents and health hazards whilst working in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.

1.3 Health and Safety control equipment:
identified by the principles of protection for occupational use, types and purpose of each type, work situations and general work environment, collective protective measures, personal protective equipment (PPE), respiratory protective equipment (RPE), local exhaust ventilation (LEV).
Resources:
materials, components and equipment relating to types, quantity, quality, sizes and the sustainability of standard and/or specialist; consumables, fluids, fuels, lubricants, coolants, bulbs, fuses, fastenings, nuts, bolts, pins, clips, hand tools, portable powered tools and equipment.

1.4 Documentation requirements:
types of documentation used including statutory requirements; contract of hire, drawings, specifications, operators manuals, safety bulletins, safety leaflets, electronic data, manufacturers information, current regulations associated with the handover of plant equipment.

1.5 Emergencies:
responsibilities for reporting situations in accordance with organisational policies, procedures and personal skills when involved with: fire, spillage, injury, emergencies relating to occupational activities, inappropriate information, lack of resources.

1.6 The purpose of protection:
how to protect the work and surrounding area against damage from general workplace activities, other occupations, contamination and environmental responsibilities.

Content:

1.7 Safety procedures and precautions:
risk assessments, leaflets, the health and safety culture e.g. human factors; attitude, motivation, perception, competence, health and safety training.

3.1 Methods of configuring plant equipment:
validate appropriate ways in which the work should be carried out, configure equipment to include; attachments, ancillaries, fire prevention (spark arrestors), structural support (anchors and ties), safety (restricted movement, passage or access, warning alarms, notices, lights), contaminant reduction (noise, gases, fluids), carriage of ancillaries or additional equipment, rail and trackside work, cutting equipment (blade or teeth angles, coatings, dressings and aspects). additions (publicity boards, notices, lights), machine control (laser measurement and guidance, global positioning system), productivity measurement (weigh load sensors, compaction sensors).

3.2 Parameter requirements:
methods to ensure that the equipment configuration meets the required parameters for the specific operational activity.

3.3 Functional and safety checks:
methods to confirm configuration functionality and safety meets expectations, compare and confirm operational outcome with given specifications, make comparisons with other plant equipment, consider previous knowledge, apply sensory abilities, (visual, audible, touch and smell) consult manufacturers' information.

3.4 Assess the suitability for handover:
type of information necessary to ensure that the user is not exposed to any risk or danger when operating using the equipment, information given when completing a familiarisation to include: equipment specific, weight, height, width, length and complexity, warnings, control functions, safety devices, emergency procedures and manufacturer's instructions.

3.5 Assess the condition of plant equipment:
daily/weekly, periodic (monthly, annual, number and hours run), pre-use, post-use, returned items post-repair, functional, safety, conformity and event based inspections.

3.6 Operators support information:
types of support information; contact information (phone numbers, e-mail addresses), contract of hire, drawings, specifications, operators manuals, safety bulletins, safety leaflets, electronic data, World Wide Web, manufacturers information.

3.7 Transfer of responsibilities:
Condition of hire, responsibilities to include; security, operational, competency, legislation, health and safety.

3.8 Hazardous and non-hazardous waste:
the environmental responsibilities, organisational procedures, manufacturers' understanding information, statutory regulations and official guidance relating to disposal.

CPM13 Evidence Required **You must** be observed by your assessor successfully carrying configuring and handling over an item of plant or machinery on **at least 1 occasion**		
Task Number	**Task Description**	**Observation**
1	Configure and Hand Over a Machine	

CPM13 Evidence Required **You must** be observed by your assessor successfully carrying out **all 10** of the specific tasks listed on **at least 1 occasion.**	
Specific Tasks to Cover	**Observation**
Configure plant machinery to given work instructions	
Check the required parameters for plant or machinery are achieved	
Complete a functional and operational check	
Complete a safety check	
Assess and confirm he condition of plant or machinery	
Assess the suitability of conditions for hand over	
Explain and demonstrate the operation of the plant or machinery	
Communicate the movement of transferred responsibility	
Complete relevant hand over documentation	
Correctly dispose of hazardous and non-hazardous waste	

UNIT REF: CPM14	UNIT TITLE: THERMAL CUTTING AND JOINING MATERIALS

Level: 2	Credit Value: 6	GLH: 60
Mapping: This unit is mapped to COSVR665 – Install, repair or modify construction resources by heating, welding, brazing, soldering and thermal cutting		
Rationale: This unit illustrates the skills, knowledge and understanding required to be deemed trained to cut and join materials using a variety of techniques. Learners will undertake preparation activities before cutting and joining materials using appropriate techniques. They will then carry out completion activities on conclusion of the work.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to prepare for thermal cutting and joining materials	1.1. Identify the materials to be cut and joined from drawings, specifications, schedules, method statements, manufacturers' information and current regulations 1.2. Outline relevant current legislation and official guidance relating to safely cutting and joining materials 1.3. List the health and safety control equipment, materials, components, consumables and equipment required 1.4. Outline organisational procedures for reporting inappropriate information and resources, emergencies and accidents 1.5. Describe the purpose of protection and how to protect the work and surrounding area from damage/contamination 1.6. Describe the procedures and safety precautions relating to the materials, components and equipment being used and the specific materials being cut and joined
2. Be able to prepare for thermal cutting and joining materials	2.1. Confirm from the information provided the materials to be cut and joined 2.2. Select the health and safety control equipment, materials, components, consumables and equipment required 2.3. Protect the work and surrounding area from damage/contamination

3. Know how to modify and cut materials by heating and thermal cutting	3.1 Describe how to prepare to modify and cut materials by heating and thermal cutting 3.2 Outline the principles and techniques for heating and thermal cutting materials including ferrous and non-ferrous materials 3.3 Describe how to heat materials to achieve: a. heat treat b. reduce or remove corrosion c. adjust (localised/spot) d. expansion and contraction fit 3.4 Describe how to cut materials by thermal cutting using: a. oxygen fuel gas arc b. plasma arc
4. Know how to join materials by welding, brazing and soldering	4.1. Describe principles of joining ferrous and non-ferrous materials 4.2. Outline procedures and techniques for joining materials by welding, brazing and soldering including: a. gas welding b. manual metal arc (MMA) welding c. metal inert gas (MIG/MAG) welding 4.3. Describe different joint types including: a. butt b. lap c. fillet 4.4. Describe procedures for inspecting and conducting non-destructive and destructive testing 4.5. Outline how to finish and dress joints
5. Be able to produce components by thermal cutting and joining materials	5.1 Prepare the materials to be heated, cut, welded, brazed or soldered 5.2 Produce components to given working instructions using a variety of techniques 5.3 Finish and dress joints as required 5.4 Use hand tools, portable power tools, power tools and equipment as required 5.5 Produce components in accordance with safe working practices and within the allocated time

6. Know how to complete activities after thermal cutting and joining materials	6.1. Describe procedures for storing gases 6.2. Describe how to dispose of hazardous and non-hazardous waste in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations, official guidance
7. Be able to complete activities after thermal cutting and joining materials	7.1. Store gases as appropriate 7.2. Dispose of hazardous and non-hazardous waste in accordance with relevant documentation

Content:

1.1 Sources of information relating to the cutting and joining of materials:
to include: drawings, specifications, schedules, method statements, risk assessments, manufacturers' information and current regulations associated with heating, welding, brazing, soldering and thermal cutting.

1.2 Legislation and official guidance:
this relates to the operative's responsibilities regarding potential accidents and health hazards whilst working in the workplace, below ground level, in confined spaces, at height; with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.

1.3 Health and Safety control equipment:
identified by the principles of protection for occupational use, types and purpose of each type, work situations and general work environment: collective protective measures, personal protective equipment (PPE), respiratory protective equipment (RPE), local exhaust ventilation (LEV), fire extinguishers (water, CO2. foam, powder) and their uses.
Resources:
materials, components and equipment relating to types; quantity, quality, sizes and the sustainability of standard and/or specialist; consumables, fluids, fuels, lubricants, coolants, fastenings, nuts, bolts, pins, clips, hand tools, portable powered tools and equipment.

1.4 Emergencies:
responsibilities for reporting situations in accordance with organisational and statutory policies and procedures, personal skills when involved with: fire, spillage, injury, emergencies relating to occupational activities, fire extinguishers (water, CO2. foam, powder) and their uses, inappropriate information, lack of resources.

1.5 The purpose of protection:
how to protect the work and surrounding area against damage from general workplace activities, other occupations, contamination and environmental responsibilities.

1.6 Safety procedures and precautions:
risk assessments, leaflets, the health and safety culture e.g. human factors; attitude, motivation, perception, competence, health and safety training.

3.1 Prepare to modify and cut materials:
to include: health and safety requirements, risk assessments, method statements, pre-use inspection, setting up of heating and cutting equipment, work area preparation, PPE requirements, hot work permit.

3.2 The principles and techniques for heating and thermal cutting:
to include: identification of gas cylinders and equipment, methods of assembly, change gas cylinders, safely setting up equipment, gas pressures, the types of flame, the correct techniques, clean nozzles.

Content:

3.3 **Methods of heating materials:**
to include: the effects of heat to metal (distortion, heat affected zone), heat treat (normalising), reduce or remove corrosion, adjust (localised/spot), expansion and contraction fit, health and safety.

3.4 **Methods of cutting materials by thermal cutting:**
to include: gases, equipment (to include plasma), gas pressures, nozzle size, the cutting process (molten pool, the reaction, temperature), aids to cutting, kerf, top plate melting, slag, PPE, health and safety.

4.1 **Principles of joining ferrous and non-ferrous materials:**
to include: fusion, adhesion, penetration, heat affected zones.

4.2 **Procedures and techniques for joining materials:**
to include: temperatures, angles, arc length, settings (voltage, open circuit voltage, amps, wire speed) brazing, soldering, gas, manual metal arc (MMA) and metal inert gas (MIG) welding (AC and DC), equipment types, filler rods, flux, gases.

4.3 **Joint types:**
to include: butt, lap, corner and fillet, positional (flat, vertical and overhead), preparation, thickness, gaps, measuring, cleaning, position, tacks, pre-treatment, parameters, nozzle, voltage, amperes, wire speed, flow rates, restarts, post-treatment).

4.4 **Methods of inspecting and conducting non-destructive and destructive testing:**
to include: non-destructive testing (visual, x-ray, dye penetrates, ultraviolet and ultrasonic), destructive testing (bend, tensile, nick break test and weld etch), imperfections (cracks, lack of penetration, lack of fusion, slag inclusion, porosity, undercut or profile imperfections, unequal leg lengths, depth of throat).

4.5 **Methods of finish and dress joints:**
to include: grinding, polishing, buffing, brushing, abrasive types (backing material, grit size, shape, hardness, flap, fibre and abrasive discs, Scotch-Brite™ pads), equipment, types of power supply, coverings (paint, powdered coating, galvafroid, oil, grease).

6.1 **Methods of storing gases:**
to include: handling, transportation, lifting using mechanical aids. Storage: time scale, stock rotation, suitable area, sources of ignition, security, full and empty cylinders, signage. Health and Safety: INDG327.

6.2 **Hazardous and non-hazardous waste:**
the environmental responsibilities, organisational procedures, manufacturers' understanding information, statutory regulations and official guidance relating to disposal.

CPM14 Evidence Required **You must** be observed by your assessor successfully thermally joining materials using **at least 2** of the 6 different methods on **at least 1 occasion**		
Task Number	**Task Description**	**Observation**
1	Oxygen and Acetylene Welding	
2	MMA Welding	
3	MIG/MAG Welding	
4	Plastic Welding	
5	Brazing	
6	Soldering	
You must be observed by your assessor successfully using thermal cutting equipment and techniques on **at least 1 occasion**		
7	Thermal Cutting	

CPM14 Evidence Required **You must** be observed by your assessor successfully carrying out **all 6** of the specific tasks listed on **at least 1 occasion.**	
Specific Tasks to Cover	**Observation**
Confirm the materials to be cut and joined	
Prepare the materials to be cut or joined	
Produce components to given working instructions using variety of techniques	
Finish and dress joints	
Store gases a appropriate	
Correctly dispose of hazardous and non-hazardous waste	

UNIT REF: CPM15	UNIT TITLE: MANAGE WORK ACTIVITIES AND RESOURCES

Level: 3	Credit Value: 5	GLH: 50
Rationale: This unit is designed to develop the learners understanding of how to manage work activities to meet project requirements. It allows the learner to acquire knowledge and understanding of how external factors affect timelines, how projects have an impact on the environment and how to plan an effective sequence of work		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to plan work activities	1.1. Describe methods for evaluating work activities against the project requirements 1.2. Explain how the available information is used to assess the resources required for the work 1.3. Describe methods for clarifying information from the customer, manufacturers, trade literature, organisational procedures 1.4. Describe external factors which can impact on the project requirements including related programmes, special working conditions, weather conditions, other occupations, resources, health and safety requirements 1.5. Describe how to evaluate influencing factors on work activities 1.6. Explain how to assess the length of work activities 1.7. Describe how to determine the sequence of work activities 1.8. Describe how to prepare a programme of work
2. Understand factors that impact on the work programme	2.1. Explain how the requirements of zero/low carbon impact on the work activities 2.2. Describe how resources can be used to make a positive contribution to the environment 2.3. Give examples of circumstances that might require a change to the work plan 2.4. Explain how to identify where alterations are needed to the work plan 2.5. Explain how to assess the impacts of changed circumstances on work activities

3. Manage the work activities and procedures	3.1. Assess the work required from the available information 3.2. Plan a sequence of work 3.3. Evaluate the work activities against project requirements 3.4. Evaluate external factors influencing the work, including other occupations and/or customers, weather conditions and health and safety requirements 3.5. Identify factors that might impact on each other including other occupations and/or customers, material and components, tools, plant and/or ancillary equipment 3.6. Record alterations to the work 3.7. Inform relevant others of required changes to work

Content:

1.1 **Methods for evaluating work activities against the project requirements:**
to include: clarification and advice from the end user, manufacturers technical information, trade organisations, organisational procedures, statutory requirements, environmental considerations.

1.2 **Assessing information to validate resource requirement for the work:**
to include: risk assessments, method statements, safe systems of work, quantities, specifications, drawings, health and safety requirements, timescales, scope of works, special working conditions, health and safety requirements.

1.3 **Clarification of information:**
to include: advice from the end user, manufacturer's technical information, trade organisations, organisational procedures, statutory requirements.

1.4 **External factors which can impact on the project:**
to include: other related programmes, special working conditions, technical skills of the employees, weather conditions, other occupations required, resources, transport, lifting aids, legal constraints, hours of work, noise restrictions, health and safety requirements.

1.5 **Methods of evaluating influencing factors:**
to include: special working conditions, technical skills of the employees, weather conditions, other occupations required, resources, transport, lifting aids, legal constraints, hours of work, noise restrictions, health and safety requirements.

1.6 **Methods of assessing the duration of work activities:**
to include: seeking advice form management, resource reliability, estimating resource requirements, comparing with similar work activities, technical skills of the employees, weather conditions, other occupations required, specialist transport requirements, legal constraints, hours of work, noise restrictions, health and safety requirements.

Content:

1.7 Determining the sequence of work activities:
to include: action lists, method statements, allocation, availability and procurement of equipment, components and consumables, technical skills of the employees, weather conditions, other occupations required, resources, transport, lifting aids, legal constraints, hours of work, noise restrictions, health and safety requirements.

1.8 Methods of preparing a programme of work:
to include: planning techniques (critical path analysis, Gantt charts), sequencing of activities, setting deadlines, action list, time requirements, resource requirements, possible disruptions to the programme (illness, other commitments, resource problems, cost), contingencies and remedial actions, weather conditions, other occupations required, legal constraints, hours of work, noise restrictions, health and safety requirements.

2.1 The impact on the work activities of zero/low carbon requirements:
to include: awareness of zero and low carbon requirements and the way resources may be used to make a positive contribution to the environment, types of materials and components that contribute to zero and low carbon outcomes.

2.2 How to use resources to make a positive contribution to the environment:
to include: awareness of zero and low carbon requirements and the way resources may be used to make a positive contribution to the environment, types of materials and components that contribute to zero and low carbon outcomes.

2.3 Circumstances that might require a change to the work plan
to include: other related programmes, weather conditions, other occupations required; availability of resources, transport, lifting aids, employees, legal constraints.

2.4 Methods of identifying where alterations are needed to the work plan:
to include review of: schedules, weather conditions, other occupations required; available resources, transport, lifting aids, employees.

2.5 Assessing the impact of change to the work activity:
to include: revising of schedules, deadlines, contracts; reallocation of, resources, transport, employees.

UNIT REF: CPM16	UNIT TITLE: DEVELOP AND MAINTAIN GOOD WORKING RELATIONSHIPS

Level: 3	Credit Value: 5	GLH: 50
Rationale: This unit is designed to develop the learners understanding of how to develop and maintain good working relationships. It allows the learner to acquire knowledge and understanding of effective communication, equality and diversity and of giving advice to customers and colleagues		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to record information given to others	1.1. Outline the organisational procedures for recording information and advice given about occupational work activities 1.2. Explain the importance of recording information and advice given about the work activities
2. Know how to develop working relationships	2.1. Describe the principles of equality and diversity 2.2. Explain the importance of promoting goodwill and trust with relevant people 2.3. Describe ways of encouraging cooperation and dialogue with others
3. Know how to provide information to others	3.1. Describe the organisational procedures for informing others about work activities 3.2. Explain the appropriate level of detail required by different people, including colleagues, employers, customers, contractors, suppliers, those affected by the work 3.3. Give examples of situations where help and advice is asked for 3.4. Give examples of situations where it is appropriate to offer alternative proposals
4. Know how to respond to information from others	4.1. Explain the importance of encouraging questions and comments 4.2. Describe situations when others require alternative proposals or suggestions 4.3. Explain how to recognise conflict or differences of opinion 4.4. Describe methods of resolving differences of opinion or conflict

5. Communicate with others to develop and maintain working relationships	5.1. Use an appropriate level of detail when informing relevant people about work activities 5.2. Give information to others within the appropriate timescale 5.3. Record information given to others about the occupational work activities including regarding timescales, health and safety requirements, and coordination of work procedures 5.4. Record discussions with others relating to changes to the work activity and alternative suggestions

Content:

1.1 The organisational procedures for recording information and advice:
to include: attendance records, shift logs, work sheets, parts sheets, pre-use check sheets, service sheets, inspection sheets, safety inspection certificates, advice notes, despatch notes, contracts, equipment records, daily records, accident books, near misses.

1.2 The importance of maintaining accurate, up to date records:
to include: legislative requirements, accurate invoicing, maintenance recording, stock control, re-order level monitoring, audit requirements.

2.1 The principles of equality and diversity:
to include: treating people fairly, accepting diversity, respecting others. Everyone having same chances, some may need extra help to get same chances. Challenge discriminatory behaviours and practice, recognise and embrace diversity. Consult with employees and customers to ensure the services and facilities meet their needs. Provide active support and promote individual rights.

2.2 Promoting goodwill and trust:
to include: keeping promises and undertakings, honest relationships, constructive relationships, co-operation and dialogue with colleagues, employers, customers, contractors, suppliers of products and services.

2.3 Encourage cooperation and dialogue with others:
to include: communicating clearly, active receptive listening, confirming tasks, priorities and responsibilities, responding to requests, reporting problems, obtaining information, requesting assistance, seeking advice and feedback.

3.1 The procedures for informing others of work activities:
to include: work sheets, schedules, method statements, risk assessments, notice boards, signs and notices, verbal, meetings, telephone, including mobile phones, SMS, e-mails.

3.2 The appropriate level of detail for work activities:
to include: relevance, suitability, quality and clarity of the information given to: colleagues, supervisors, managers, hire desk controllers, health and safety officers, customers, contractors and suppliers, those affected by the work, other occupational areas.

3.3 Methods of asking for help and advice:
to include: when, how, empowering, confidence, questioning, formally, informally, different situations, colleagues, supervisors, managers, hire desk controllers, health and safety officers, customers, contractors, suppliers.

Content:

3.4 Methods of offering help and advice:
to include: help and advice within limits of own authority, procedures for dealing with queries and unexpected problems, the extent of personal authority and responsibility, the implications of giving information and advice beyond authorized limits (personal and corporate liability), procedures when issues are outside own authority.

4.1 Methods of encouraging questions and comments:
to include: types of questions, planning questions (ensure they encourage thinking), ask questions in ways that include everyone, give people time to think, judging responses, don't fob people off, follow up peoples responses, research additional information if required.

4.2 Alternative proposals or suggestions:
to include: issues relating to end users or employees differing expectations of what is possible e.g. whether something can be fixed or needs replacing when out of warranty and who will meet the costs. Conveying bad news but suggesting alternatives and solutions. Gaining all relevant colleagues and specialists' views in order to inform decision making. Recognising all contributions (proposals) as being of equal importance to foster inclusion and achieve positive resolution.

4.3 Recognising conflicts or differences of opinion:
to include: responding assertively, dealing with destructive criticism, giving constructive criticism, colleagues not speaking to each other or ignoring each other, contradicting and making disparaging remarks to one another, deliberately undermining or not co-operating with each other (to the downfall of the team or department), factions meeting to discuss issues separately when they affect the whole organisation which can create divisions, one department being left out of meetings.

4.4 Methods of resolving differences of opinion or conflict:
to include: working closely to address issues, staying calm, not reacting until it is clear as to what is going on, avoid confrontation and being defensive. Deal specifically with solutions to issues, offer alternatives, dealing with the issues not the negative emotions, making compromises, effective resolution, realistic expectations, long and short term goals, giving direct feedback, try and end on a positive note, follow up procedures.

UNIT REF: CPM17	UNIT TITLE: CONFIRM THE OCCUPATIONAL METHOD OF WORK

Level: 3	Credit Value: 5	GLH: 50
Rationale: This unit is designed to develop the learners understanding of how to manage methods of work to meet project requirements. It allows the learner to acquire knowledge and understanding of how understand projects and their requirements, how to use resources efficiently and effectively and the effects methods of work have on the environment		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Understand project information	1.1. Describe the criteria for the project, including conformity to statutory requirements, customer and user needs, contract requirements, environmental considerations 1.2. Describe the different types of project data and how they are expressed, including quantities, specifications, drawings, health and safety requirements, timescales, scope of works 1.3. Describe how to assess the available project data for sufficiency 1.4. Explain how to summarise project data 1.5. Describe alternative sources of obtaining work information 1.6. Describe the information needs of others including colleagues, employers, customers, contractors, suppliers, those affected by the work
2. Understand project requirements	2.1. Describe the importance of using resources efficiently 2.2. Explain the methods of work that can achieve zero or low carbon outcomes 2.3. Explain the statutory and contractual requirements of the project 2.4. Describe the technical criteria that must be met

3. Select the method of work	3.1. Assess available data to determine the occupational work method, including drawings, specifications, schedules, manufacturers' information, method of work, risk assessments, programme of work 3.2. Obtain additional information about the work from appropriate sources 3.3. Record additional information about the work in an appropriate format 3.4. Identify work methods that will make efficient use of resources 3.5. Select work methods that meet project, statutory and contractual requirements 3.6. Communicate the selected work methods to others

Content:

1.1 Criteria for the required project:
to include: clarification and advice from the end user, manufacturers technical information, trade organisations, organisational procedures, statutory requirements, environmental considerations.

1.2 Types of project criteria and data:
to include: risk assessments, method statements, safe systems of work, quantities, specifications, drawings, health and safety requirements, timescales, scope of works, special working conditions, health and safety requirements.

1.3 Assess the project criteria and data for accuracy:
methods of clarification to include: advice from the end user, manufacturer's technical information, trade organisations, organisational procedures, statutory requirements.

1.4 Methods of summarising project criteria and data:
methods of summarisation to include: advice from the end user, manufacturer's technical information, trade organisations, written reports, work studies, action plans, contractual requirements.

1.5 Alternative sources of information relating to the project:
to include: drawings, specifications, schedules, workshop manuals, parts manuals, service bulletins, electronic data and cross reference information, current regulations associated with the project.

1.6 Information requirements of others:
to include information for: colleagues, employers, end users, contractors, suppliers, other occupations/people associated with the work, enforcement officers.

2.1 The importance of effective use of resources:
to include: action lists, allocation, availability and procurement of equipment, components and consumables.

2.2 Methods of work that can achieve zero or low carbon outcomes:
to include: awareness of zero and low carbon requirements and the way resources may be used to make a positive contribution to the environment, types of materials and components that contribute to zero and low carbon outcomes.

Content:

2.3 The project statutory and contractual requirements:
to include: the operative's responsibilities regarding potential accidents and health hazards whilst completing the project, working below ground level, in confined spaces, at height, with tools and equipment, with movement/storage of materials and end user specifications.

2.4 Ensuring that the technical criteria for the project is met:
To include: project requirements, contract conditions, contract programme stipulations, health and safety requirements of operatives.

UNIT REF: CPM18	UNIT TITLE: DIAGNOSE FAULTS IN PLANT OR MACHINERY

Level: 3	Credit Value: 5	GLH: 50
Mapping: This units is mapped to **COSVR664 –** Diagnose faults in plant or machinery systems or components		
Rationale: This unit illustrates the skills, knowledge and understanding required to be deemed trained to diagnose faults in plant or machinery. Learners will undertake preparation activities before diagnosing faults in plant or machinery. They will then carry out completion activities on conclusion of the work.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to prepare for diagnosing faults in plant or machinery	1.1. Evaluate diagnostic requirements using drawings, specifications, schedules, method statements, workshop manuals, technical service bulletins, parts manuals, manufacturers' information, current regulations 1.2. Summarise relevant current legislation and official guidance relating to safely diagnosing faults in plant or machinery 1.3. Classify the health and safety control equipment, materials, components, consumables, and specialist diagnostic aids and equipment required 1.4. Summarise organisational procedures for reporting inappropriate information and resources, emergencies and accidents 1.5. Describe the purpose of protection and how to protect the work and surrounding area from damage/contamination 1.6. Summarise the procedures and safety precautions relating to the specific plant or machinery being diagnosed 1.7. Interpret information to define the diagnosis start point 1.8. Explain the causes and impact of different types of faults and defects which affect plant or machinery
2. Be able to prepare for diagnosing faults in plant or machinery	2.1. Confirm the inspection and diagnostic requirements from the information provided 2.2. Select the health and safety control equipment materials, consumables, components and equipment required 2.3. Protect the work and surrounding area from damage /contamination 2.4. Analyse information to define the diagnosis start point

3. Know how to diagnose faults in plant or machinery	3.1. Explain how to check the calibration of specialist diagnostic aids and equipment. 3.2. Summarise how the following techniques can be used to diagnose faults on plant or machinery a. observing operational functions b. interpreting sounds and smells c. applying awareness of the situation 3.3. Summarise methods and procedures for diagnosing faults on specific plant or machinery to given working instructions 3.4. Explain how to use specialist diagnostic aids and equipment to identify: a. deterioration, damage, excess wear and leaks b. non-critical defects c. critical defects 3.5. Explain how to collect and analyse data from specialist diagnostic aids and equipment
4. Be able to diagnose faults in plant or machinery	4.1. Check the calibration of specialist diagnostic aids and equipment 4.2. Diagnose faults on plant or machinery to given working instructions 4.3. Use specialist diagnostic aids and equipment to support identification of: a. deterioration, damage, excess wear and leaks b. non-critical defects c. critical defects 4.4. Collect and analyse data from specialist diagnostic aids and equipment 4.5. Use hand tools, specialist diagnostic aids and equipment and access equipment as required 4.6. Complete the diagnosis in accordance with safe working practices and within the allocated time

5. Know how to complete activities after diagnosing faults in plant or machinery	5.1 Explain the implications for the operational safety of plant or machinery resulting from faults 5.2 Outline procedures for reporting and recording findings 5.3 Outline procedures for marking plant or machinery as hazardous 5.4 Describe how to dispose of hazardous and non-hazardous waste in accordance with e.g. environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations, official guidance
6. Be able to complete activities after diagnosing faults in plant or machinery	6.1 Record and report in the appropriate format findings of diagnostic inspections on plant or machinery including implications for operational safety 6.2 Clearly mark any plant or machinery defined as hazardous 6.3 Dispose of hazardous and non-hazardous waste in accordance with e.g. environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations, official guidance

Content:

1.1 **Evaluate diagnostic requirements:**
to include: drawings, specifications, schedules, method statements, risk assessments, manufacturers information and current regulations associated with functional diagnostics on plant equipment.

1.2 **Legislation and official guidance:**
to include: the operative's responsibilities regarding potential accidents and health hazards whilst completing maintenance tasks in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.

1.3 **Health and Safety control equipment:**
identified by the principles of protection for occupational use, types and purpose of each type, work situations and general work environment: collective protective measures, personal protective equipment (PPE), respiratory protective equipment (RPE), local exhaust ventilation (LEV).
Resources:
materials, components and equipment relating to types; quantity, quality, sizes and the sustainability of standard and/or specialist; consumables, fluids, fuels, lubricants, coolants, hand tools, portable powered tools and equipment.

1.4 **Emergencies:**
responsibilities for reporting situations in accordance with organisational policies and procedures and personal skills when involved with: fire, spillage, injury, emergencies relating to occupational activities, inappropriate information, lack of resources.

1.5 **The purpose of protection:**
how to protect the work and surrounding area against damage from general workplace activities, other occupations, contamination and environmental responsibilities.

Content:

1.6 **Safety procedures and precautions:**
risk assessments, leaflets, the health and safety culture e.g. human factors; attitude, motivation, perception, competence, health and safety training.

1.7 **How to identify information to define a start point for diagnostics:**
from: drawings, specifications, schedules, workshop manuals, parts manuals, service bulletins, electronic data and cross reference information, method statements, risk assessments, manufacturers information and current regulations relating to plant equipment.

1.8 **The impact of faults and defects:**
to include: continual, intermittent, breakdowns and common defects, deterioration, damage, fair wear and tear, leaks, excessive wear, critical defects e.g. safety problems, safety defects etc. non-critical defects e.g. minor defects, adjustments etc.

3.1 **Methods for calibrating diagnostic equipment:**
to include: zeroing, daily/weekly, periodic (monthly, annual), pre-use, conformity of test equipment.

3.2 **Techniques for diagnosing faults:**
methods and techniques used to diagnose faults on plant equipment: situational awareness, sight, smell, touch, hearing.

3.3 **Methods and procedures for diagnosing faults:**
investigate and establish the most likely causes of the faults by gaining information from operators and users on symptoms and problems. Consider information from existing records, analyse information to define the diagnosis start point, observe the operational functions of plant and machinery components and systems. Recommendations and suggestions for repair requirements in power units, transmissions, steering, hydraulic systems, pumps, brakes, pneumatic systems, electrical systems, electronic components and operating ancillaries and attachments.

3.4 **Use of specialist diagnostic equipment:**
to identify; deterioration, damage, excess wear, leaks, non-critical and critical defects.

3.5 **Methods of collecting and analyse data:**
using diagnostic aids to include: multi-meters, pressure and flow gauges, computers, test lamps, portable appliance testing equipment and other specialist tools and equipment, analyse the data against manufacturers specifications.

5.1 **The implications of faults:**
what are the implications of faults for other work and the operational safety of the plant equipment?

5.2 **Record keeping:**
organisational procedures and statutory requirements relating to recording and processing servicing and maintenance information.

5.3 **Methods of marking equipment as hazardous:**
how to mark, tag and place notices on plant equipment and components deemed hazardous.

5.4 **Hazardous and non-hazardous waste:**
the environmental responsibilities, organisational procedures, manufacturers' understanding information, statutory regulations and official guidance relating to disposal.

CPM18 Evidence Required **You must** be observed by your assessor successfully carrying out fault diagnoses on **at least 4** of the 10 systems on **at least 1 occasion**			
Task Number	**Task Description**	**System**	**Observation**
1	Carry Out Fault Diagnoses to a Power Unit	Power Unit	
2	Carry Out Fault Diagnoses to a Transmission	Transmission	
3	Carry out Fault Diagnoses to Steering	Steering	
4	Carry Out Fault Diagnoses to Hydraulics	Hydraulics	
5	Carry Out Fault Diagnoses to a Pump	Pumping	
6	Carry Out Fault Diagnoses to Breaks	Breaks	
7	Carry Out Fault Diagnoses to Pneumatics	Pneumatics	
8	Carry Out Fault Diagnoses to Electrics	Electrics	
9	Carry Out Fault Diagnoses to Electronics	Electronics	
10	Carry Out Fault Diagnoses to Auxiliaries and Attachments	Auxiliaries	

CPM18 Evidence Required **You must** be observed by your assessor successfully carrying out **all 6** of the specific tasks listed on **at least 1 occasion.**	
Specific Tasks to Cover	**Observation**
Check the calibration of specialist diagnostic aids and equipment	
Diagnose faults on plant or machinery	
Use specialist diagnostic aids and equipment to support identification of different types of defects	
Collect and analyse data from specialist diagnostic aids and equipment	
Clearly mark any plant or machinery defined as hazardous	
Correctly dispose of hazardous and non-hazardous waste	

UNIT REF: CPM19	UNIT TITLE: PLAN AND CARRY OUT SERVICING TO MAINTAIN PLANT OR MACHINERY

Level: 3	Credit Value: 10	GLH: 100
Mapping: This units is mapped to **COSVR670 –** Determine and complete service to maintain plant or machinery		
Rationale: This unit illustrates the skills, knowledge and understanding required to be deemed trained to plan and carry out servicing to maintain plant or machinery. Learners will undertake preparation activities before servicing and carry out completion activities on conclusion of the work.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to prepare to plan and carry out servicing to maintain plant or machinery	1.1. Interpret work requirements by analysing drawings, specifications, schedules, procedures, method statements, workshop manuals, technical service bulletins, parts manuals, manufacturers' information, current regulations 1.2. Summarise relevant current legislation and official guidance relating to safely servicing plant or machinery 1.3. Classify the types of health and safety control equipment, materials, components, consumables and equipment required 1.4. Summarise organisational procedures for reporting inappropriate information and resources, emergencies and accidents 1.5. Describe the purpose of protection and how to protect the work and surrounding area from damage/contamination 1.6. Summarise the relevant procedures and safety precautions relating to the specific plant or machinery being serviced 1.7. Explain how to cross reference information found in workshop and parts manuals, guides, technical service bulletins and electronic data
2. Be able to prepare to plan and carry out servicing to maintain plant or machinery	2.1. Clarify and confirm the servicing requirements for specific plant or machinery based on the information provided 2.2. Select the health and safety control equipment, materials, components, consumables and equipment required 2.3. Protect the work and surrounding area from damage/contamination 2.4. Cross reference information found in workshop and parts manuals, guides, technical service bulletins and electronic data

3. Know how to plan and carry out servicing to maintain plant or machinery	3.1. Summarise the importance of servicing requirements for different systems 3.2. Explain the purpose of replacing different types of service items including fluids, spark plugs, filters, drive belts, brake components, bulbs, fuses, gaskets, seals 3.3. Explain methods and procedures for replacing different types of service items including fluids, spark plugs, filters, drive belts, brake components, bulbs, fuses, gaskets, seals 3.4. Explain methods, procedures and the purpose of carrying out routine adjustments 3.5. Explain how to clean parts and components and secure fastenings, nuts, bolts, caps and plugs 3.6. Summarise methods and procedures for adjusting high temperature and high pressure components and systems 3.7. Explain how to check for defects by sight, touch, smell and sound 3.8. Summarise the functional, operational and safety checks to complete after servicing plant or machinery
4. Be able to plan and carry out servicing to maintain plant or machinery	4.1. Check or replace service items 4.2. Lubricate parts, components, linkages, cables 4.3. Clean parts and components 4.4. Check security of fastenings including nuts, bolts, caps and plugs as required 4.5. Make adjustments and adaptions to maintain effectiveness, efficiency and economy 4.6. Follow procedures for making routine and non-routine adjustments on pressurised systems 4.7. Use hand tools, portable powered tools and equipment and access equipment as required 4.8. Complete servicing in accordance with safe working practices and within the allocated time 4.9. Complete functional, operational and safety checks
5. Know how to complete activities after servicing and maintaining plant or machinery	5.1 Explain how to complete and maintain records of the work 5.2 Explain how to clean the work area 5.3 Summarise procedures for disposing of hazardous and non-hazardous waste in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations, official guidance

6. Be able to complete activities after servicing and maintaining plant or machinery	6.1 Clean the work area and dispose of waste in accordance with relevant documentation 6.2 Complete and maintain records of the work in the appropriate format

Content:

1.1 Interpreting service requirements:
from: workshop manuals, parts manuals, service bulletins, electronic data associated with the servicing of plant equipment.

1.2 Legislation and official guidance:
to include: the operative's responsibilities regarding potential accidents and health hazards whilst completing maintenance tasks in the workplace, below ground level, in confined spaces, at height. with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.

1.3 Health and Safety control equipment:
identified by the principles of protection for occupational use, types and purpose of each type, work situations and general work environment: collective protective measures, personal protective equipment (PPE), respiratory protective equipment (RPE), local exhaust ventilation (LEV),
Resources:
materials, components and equipment relating to types. quantity, quality, sizes and the sustainability of standard and/or specialist: consumables, fluids, fuels, lubricants, coolants, filters, drive belts, brake components, bulbs, fuses, gaskets, seals, fastenings, nuts and bolts, pins, clips, hand tools, portable powered tools and equipment.

1.4 Emergencies:
responsibilities for reporting situations in accordance with organisational policies and procedures and personal skills when involved with: fire, spillage, injury, emergencies relating to occupational activities, inappropriate information, lack of resources.

1.5 The purpose of protection:
how to protect the work and surrounding area against damage from general workplace activities, other occupations, contamination and environmental responsibilities.

1.6 Safety procedures and precautions:
risk assessments, leaflets, the health and safety culture e.g. human factors; attitude, motivation, perception, competence, health and safety training.

1.7 How to cross reference information relating to service requirements:
how to cross reference information found in: workshop manuals, parts manuals, service bulletins, electronic data associated with the servicing of plant equipment.

Content:

3.1 The importance of servicing systems:
periodic, scheduled, safety, conformity, longevity, residual value and event based servicing methods, apply routine and non-routine maintenance service methods and procedures required by the manufacturer and owner.

3.2 The reasons for replacing service items:
to include: filters, fluids, drive belts, brake components, bulbs, fuses, gaskets, seals.

3.3 Methods and procedures:
for replacing service items, to include: filters, drive belts, brake components, bulbs, fuses, gaskets, seals.

3.4 Routine adjustments:
the methods, procedures and purpose for carrying out adjustments and adaptions to maintain operational effectiveness and efficiency on plant equipment to include: belts, chains, cables, linkages, clearances, brakes, clutches.

3.5 Methods of cleaning and securing components:
to include: cleaning parts and components, flush through cooling, lubrication and fluid systems, fastenings (nuts, bolts, caps, plugs etc).

3.6 Working with high pressure and temperature systems:
methods and procedures for safely working on and adjusting high temperature and high pressure components and systems.

3.7 Methods of checking:
for defects e.g. sight, touch, smell and sound.

3.8 Functional, operational and safety checks:
methods used to carry out functional, operational and safety checks on plant equipment related to the service activities that have been performed; acceleration and / or deceleration, power, pressure, flow, maximum speed, idle speed, selection of gears, engagement and or disengagement, starting performance, leak tests.

5.1 Record keeping:
organisational procedures and statutory requirements relating to recording and processing servicing and maintenance information.

5.2 Cleaning the work area:
cleaning tools and equipment to maximise workplace efficiency, how to carry out housekeeping activities safely and in a way that minimises inconvenience to customers and staff, risks involved when using solvents and detergents, advantages of good housekeeping.

5.3 Hazardous and non-hazardous waste:
the environmental responsibilities, organisational procedures, manufacturers' understanding information, statutory regulations and official guidance relating to disposal.

CPM19 Evidence Required **You must** be observed by your assessor successfully planning and carrying out a service on **at least 1 occasion**		
Task Number	**Task Description**	**Observation**
1	Plan and Carry out a Service	

CPM19 Evidence Required **You must** be observed by your assessor successfully carrying out **all 11** of the specific tasks listed on **at least 1 occasion.**	
Specific Tasks to Cover	**Observation**
Clarify and confirm the servicing requirements	
Cross reference information found in workshop and parts manuals, guides, technical service bulletins and electronic data	
Check or replace service items	
Lubricate parts, components, linkages and cables	
Clean parts and components	
Check security of fastenings including nuts, bolts, caps and plugs	
Make adjustments and adaptations to maintain effectiveness, efficiency and economy	
Make routine and non-routine adjustments on pressurised systems	
Complete a functional and operational check	
Complete a safety check	
Clean the work area and dispose of waste in accordance with relevant documentation	

UNIT REF: CPM20	UNIT TITLE: ADVISE ON REPAIR OR REPLACEMENT FOR PLANT OR MACHINERY

Level: 3	Credit Value: 18	GLH: 180
Mapping: This units is mapped to **COSVR671 –** Determine and advise on repair or replacement for returning plant or machinery to service		
Rationale: This unit illustrates the skills, knowledge and understanding required to be deemed trained to advise on the repair or replacement required to return plant or machinery to service. Learners will undertake preparation activities, advise on repair or replacement requirements and undertake completion activities on conclusion of the work.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to prepare to advise on repair or replacement for plant or machinery	1.1. Interpret work requirements by analysing drawings, specifications, schedules, procedures, method statements, workshop manuals, technical service bulletins, parts manuals, price lists, manufacturers' information, current regulations 1.2. Summarise relevant current legislation and official guidance relating to safely advising on repair or replacement for plant or machinery 1.3. Classify the types of health and safety control equipment, materials, components, consumables and equipment required 1.4. Summarise organisational procedures for reporting inappropriate information and resources, emergencies and accidents 1.5. Describe the purpose of protection and how to protect the work and surrounding area from damage/contamination 1.6. Summarise the relevant procedures and safety precautions relating to the specific plant or machinery
2. Be able to prepare to advise on repair or replacement for plant or machinery	2.1. Clarify and confirm the work requirements based on the information provided 2.2. Select the health and safety control equipment, materials, components, consumables and equipment required 2.3. Protect the work and surrounding area from damage/contamination

3. Know how to advise on repair or replacement for plant or machinery	3.1. Explain methods for inspecting plant or machinery 3.2. Explain methods for estimating costs associated with repair or replacement 3.3. Summarise procedures for seeking advice from management on repair or replacement 3.4. Summarise procedures for advising on repair or replacement for specific plant or machinery
4. Be able to advise on repair or replacement for plant or machinery	4.1. Inspect plant or machinery to determine the specific repair or replacement requirements 4.2. Evaluate the viability of repair or replacement for plant or machinery in accordance with given working instructions 4.3. Estimate costs associated with repair or replacement 4.4. Advise on repair or replacement for specific plant or machinery 4.5. Use hand tools, portable powered tools, specialist measuring and inspection instruments, ancillary equipment and access equipment as required 4.6. Complete the work in accordance with safe working practices and within the allocated time
5. Know how to complete activities after advising on repair or replacement for plant or machinery	5.1. Explain how to complete and maintain records of the work and report findings 5.2. Summarise procedures for disposing of hazardous and non-hazardous waste in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations, official guidance
6. Be able to complete activities after advising on repair or replacement for plant or machinery	6.1. Complete and maintain records of the work in the appropriate format 6.2. Report findings to the relevant individual(s) 6.3. Dispose of waste in accordance with relevant documentation

Content:

1.1 Interpreting work requirements:
from: drawings, specifications, schedules, procedures, method statements, workshop manuals, technical service bulletins, parts manuals, price lists, manufacturers' information, current regulations.

1.2 Legislation and official guidance:
to include: the operative's responsibilities regarding potential accidents and health hazards whilst completing maintenance tasks in the workplace, below ground level, in confined spaces, at height. with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.

1.3 Health and Safety control equipment:
identified by the principles of protection for occupational use, types and purpose of each type, work situations and general work environment: collective protective measures, personal protective equipment (PPE), respiratory protective equipment (RPE), local exhaust ventilation (LEV),
Resources:
materials, components and equipment relating to types. quantity, quality, sizes and the sustainability of standard and/or specialist: consumables, fluids, fuels, lubricants, coolants, filters, drive belts, brake components, bulbs, fuses, gaskets, seals, fastenings, nuts and bolts, pins, clips, hand tools, portable powered tools and equipment.

1.4 Emergencies:
responsibilities for reporting situations in accordance with organisational policies and procedures and personal skills when involved with: fire, spillage, injury, emergencies relating to occupational activities, inappropriate information, lack of resources.

1.5 The purpose of protection:
how to protect the work and surrounding area against damage from general workplace activities, other occupations, contamination and environmental responsibilities.

1.6 Safety procedures and precautions:
risk assessments, leaflets, the health and safety culture e.g. human factors; attitude, motivation, perception, competence, health and safety training.

3.1 Methods for measuring and inspecting components:
how to measure and inspect component parts and sub-assemblies for serviceability, the different specialist equipment and their uses for measuring and comparing component parts; micrometre, Vernier callipers, rules, bore gauges, dial gauges, feeler gauges, plug gauges, ring gauges, new component parts. The methods and techniques for using measuring equipment and the calculations required to evaluate results and analyse against manufacturer's specification.

3.2 Methods for estimating costs:
how to estimate costs to include: time, labour, component, sub-assemblies, parts, consumables, overheads (transport, delivery, operational down time, power consumption. specialist tools and services); the cost for a like for like replacement.

3.3 Procedures for seeking advice:
the chain of authority, methods of seeking advice to include; electronic (e-mails), written and verbal communication from manufacturers and colleagues.

3.4 Procedures for advising on repair or replacement:
to include; estimated cost for labour, availability of replacement components and parts, overheads (transport, delivery, operational down time, power consumption. specialist tools and services), identification of replacement items of plant equipment that will provide the same and improved operational service, consider the benefits of replacement.

Content:

5.1 Record keeping:
organisational procedures and statutory requirements relating to recording and processing advice and maintenance information.

5.2 Hazardous and non-hazardous waste:
the environmental responsibilities, organisational procedures, manufacturers' understanding information, statutory regulations and official guidance relating to disposal.

CPM20 Evidence Required

You must be observed by your assessor successfully inspecting and assessing in a major component on **at least 1 occasion**

Task Number	Task Description	Observation
1	Inspect and Assess a Major Component	

CPM20 Evidence Required

You must be observed by your assessor successfully carrying out **all 6** of the specific tasks listed on **at least 1 occasion.**

Specific Tasks to Cover	Observation
Inspect plant or machinery to determine the specific repair or replacement	
Evaluate the viability of repair or replacement for plant or machinery	
Estimate costs associated with the repair or replacement	
Advise on repair or replacement for specific plant or machinery	
Report findings to the relevant individual (s)	
Dispose of waste in accordance with relevant documentation	

UNIT REF: CPM21	UNIT TITLE: PROVIDE USERS OF PLANT OR MACHINERY WITH TECHNICAL INFORMATION, ADVICE AND GUIDANCE

Level: 3	Credit Value: 3	GLH: 30
Mapping: This units is mapped to **COSVR673 – Provide technical information, advice and guidance to users of plant or machinery**		
Rationale: This unit illustrates the skills, knowledge and understanding required to be deemed trained to provide users of plant or machinery with technical information, advice and guidance. Learners will undertake preparation activities, provide users with the advice they require and undertake completion activities on conclusion of the work.		

LEARNING OUTCOMES The Learner will:	ASSESSMENT CRITERIA The Learner can:
1. Know how to prepare for providing users of plant or machinery with technical information, advice and guidance	1.1. Interpret work requirements by analysing drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, current regulations 1.2. Summarise relevant current legislation and official guidance relating to safely providing technical information, advice and guidance 1.3. Classify the types of health and safety control equipment, materials, components, consumables and equipment required 1.4. Summarise organisational procedures for reporting inappropriate information and resources, emergencies and accidents 1.5. Describe the purpose of protection and how to protect the work and surrounding area from damage/contamination 1.6. Summarise the relevant procedures and safety precautions relating to providing technical information, advice and guidance
2. Be able to prepare for providing users of plant or machinery with technical information, advice and guidance	2.1. Clarify end users' needs and the specific plant or machinery about which they require information 2.2. Select the health and safety control equipment, materials, components, consumables and equipment required 2.3. Protect the work and surrounding area from damage/contamination 2.4. Confirm the information, advice and guidance to provide based on the specific plant or machinery and end users' needs

3. Know how to provide users of plant or machinery with technical information, advice and guidance	3.1. Summarise the different types of information, advice and guidance available 3.2. Explain different communication methods for providing information, advice and guidance 3.3. Explain how to provide information, advice and guidance to end users with different requirements 3.4. Explain how to analyse information to provide answers to specific queries 3.5. Summarise the other sources of information available 3.6. Explain where to source and supply replacement literature and documentation from 3.7. Summarise procedures for confirming the advice and guidance provided is appropriate
4. Be able to provide users of plant or machinery with technical information, advice and guidance	4.1. Confirm the appropriate communication method for providing information, advice and guidance to end users 4.2. Analyse information to provide answers to specific queries 4.3. Obtain further information from colleagues and multi-media sources as required 4.4. Source replacement literature and documentation as required 4.5. Confirm the advice and guidance provided is appropriate 4.6. Provide information, advice and guidance in accordance with safe working practices and within the allocated time
5. Know how to complete activities after providing users of plant or machinery with technical information, advice and guidance	5.1. Explain how to complete and maintain records in the appropriate format 5.2. Summarise procedures for disposing of hazardous and non-hazardous waste in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations, official guidance
6. Be able to complete activities after providing users of plant or machinery with technical information, advice and guidance	6.1. Complete and maintain records of the information, advice and guidance provided in the appropriate format 6.2. Dispose of waste in accordance with relevant documentation

Content:

1.1 Interpret information requirements:
from: drawings, specifications, schedules, method statements, risk assessments, manufacturers information and current regulations associated with plant equipment.

1.2 Legislation and official guidance:
to include: the operative's responsibilities regarding potential accidents and health hazards whilst completing maintenance tasks in the workplace, below ground level, in confined spaces, at height. with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.

1.3 Health and Safety control equipment:
identified by the principles of protection for occupational use, types and purpose of each type, work situations and general work environment: collective protective measures, personal protective equipment (PPE), respiratory protective equipment (RPE), local exhaust ventilation (LEV).
Resources:
literature, forms, documents, materials, components and equipment relating to types; quantity, quality, sizes and the sustainability of standard and/or specialist; consumables, fluids, fuels, lubricants, coolants, fastenings, nuts, bolts, pins, clips, hand tools, portable powered tools and equipment.

1.4 Emergencies:
responsibilities for reporting situations in accordance with organisational policies and procedures and personal skills when involved with: fire, spillage, injury, emergencies relating to occupational activities, inappropriate information, lack of resources.

1.5 The purpose of protection:
how to protect the work and surrounding area against damage from general workplace activities, other occupations, contamination and environmental responsibilities.

1.6 Safety procedures and precautions:
risk assessments, leaflets, the health and safety culture e.g. human factors; attitude, motivation, perception, competence, health and safety training.

3.1 Types of information, advice and guidance available:
to including; statutory requirements, contract of hire, drawings, specifications, operators manuals, safety bulletins, safety leaflets, electronic data, manufacturers information, World Wide Web, current regulations associated with plant equipment.

3.2 Communicate with end users politely, respectfully and effectively:
the importance of effective communication, barriers to communication (body language, familiarity, inappropriate language and behaviour, emotional, environmental and personal factors), methods of addressing the end user, empathy, listening and questioning techniques, clarification of understanding, communication of information at the correct technical level.

3.3 Methods of providing information:
to include; electronic (e-mails), written and verbal communication, signs, notices, memos, telephone, contract of hire, safety bulletins, safety leaflets, toolbox talks, operator manuals, manufacturers information.

3.4 Methods of analysing information:
investigate and establish the most likely causes of the issue by gaining information from the end user on queries in order to provide answers.

3.5 Summarise sources of information:
to including; colleagues, contract of hire, drawings, specifications, operators manuals, safety bulletins, safety leaflets, electronic data, World Wide Web, manufacturers information, current regulations associated with the plant equipment.

Content:

3.6 **Methods of replacing documents:**
source of replacement literature and documentation to include; manufacturers, industry trade associations, World Wide Web, internal department, intranet.

3.7 **Procedures for confirming the information is appropriate:**
the information given out is correct, that it is unambiguous, can be readily understood, identify the end user, be aware of any difficulties they may experience in processing the information, ask relevant questions to check understanding, give demonstrations, give supportive information (written and verbal), seek advice and gain further support.

5.2 **Record keeping:**
organisational procedures and statutory requirements relating to recording and processing servicing and maintenance information.

5.2 **Hazardous and non-hazardous waste:**
the environmental responsibilities, organisational procedures, manufacturers' understanding information, statutory regulations and official guidance relating to disposal.

CPM21 Evidence Required

You must be observed by your assessor successfully providing technical information, advice guidance to an end user on **at least 1 occasion**

Task Number	Task Description	Observation
1	Provide Advice and Guidance to an End User	
2	Provide Technical Information to an End User	

CPM21 Evidence Required

You must be observed by your assessor successfully carrying out **all 7** of the specific tasks listed on **at least 1 occasion.**

Specific Tasks to Cover	Observation
Clarify end users' needs and the specific plant or machinery it relates to	
Confirm the appropriate communication method to the end user	
Analyse information and provide answers to queries	
Obtain further information from colleagues and multi-media sources	
Source replacement literature and documentation as required	
Confirm the advice and guidance provided is appropriate	
Complete and maintain record in the appropriate format	