

Occupation Profile

Modern Apprenticeship in Engineering - Technical Support Apprenticeship SCQF Level 7

Approved by: Engineering Technical Expert Group

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Purpose:

This occupation profile consists of 16 work situations routinely carried out in Technical Support roles. Collectively these describe all the performance requirements and knowledge and understanding requirements apprentices need to demonstrate competence in the occupation. Each work situation has a unique reference number and is set out as follows:

- Work situation title, goal, brief outline, performance requirements and knowledge and understanding requirements



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Mandatory work situations

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Performing core engineering activities

Goal of work situation:

To safely perform core engineering activities.

Brief outline:

This involves carrying out core engineering activities in accordance with technical specifications, instructions and organisational requirements.

Performance requirements

1. Obtaining clear and detailed information from drawings and other technical documentation to carry out specified engineering activities
2. Confirming programmes of work with relevant people in accordance with organisational procedures
3. Contributing to developing risk assessments and method statements of risks for specific engineering activities
4. Coordinating site services and activities of other trades affected by engineering activities in compliance with industry practices and organisational procedures
5. Identifying and using correct PPE in accordance with manufacturers guidance
6. Calibrating engineering tools and equipment in accordance with manufacturer's instructions.
7. Communicating engineering information to relevant others in accordance with organisational procedures
8. Carrying out relevant engineering activities in line with quality requirements
9. Checking engineering activities and outputs meet quality requirements
10. Carrying out relevant handover procedures in accordance with organisational requirements
11. Leaving work sites in appropriate condition in accordance with organisational requirements
12. Completing and securely storing relevant engineering documentation in accordance with organisational requirements

Knowledge and understanding requirements

1. How to access and interpret engineering information from drawings and other technical documentation
2. Current legislation, guidelines, policies, procedures, Safe Systems of Work (SSOW) and protocols which are relevant to your working practice and to which you must adhere
3. How to contribute to developing risk assessments and method statements for engineering activities
4. Importance and correct use of any equipment and PPE required
5. Duty to report any acts and omissions that could have a negative impact on yourself, relevant others and your organisation
6. How to interpret first and third angle drawings, imperial and metric systems of measurement, workpiece reference points and system of tolerancing
7. Principles and practice of communicating in engineering environments
8. Organisational procedures for checking resources are fit for purpose
9. Principles and practice of metrology and calibration
10. What is meant by 'engineering assets'
11. Operation, applications, advantages and limitations of different engineering assets
12. Principles and practice of handover
13. Principles and practice of Management of Change (MOC)
14. Importance of Quality requirements associated with engineering operations
15. Organisational requirements for completing and securely storing documentation

13. Dealing effectively with engineering problems within the scope and limitations of your own competence, responsibilities, and accountability
14. Reporting engineering problems which cannot be solved and escalating, where necessary in accordance with organisational requirements
15. Disposing of waste materials, substances, and fluids in accordance with legislative and organisational procedures
16. Scope and limitations of your own competence, responsibilities and accountability
17. Organisational procedures for reporting and escalating problems which cannot be solved
18. Organisational procedures for disposing of waste materials, substances and fluids
19. Business and commercial considerations associated with engineering activities
20. How to keep up to date on technical advances, emerging technologies, and new products in engineering
21. Use and importance of digital equipment and data in engineering activities

Developing meta-skills and personal practice

Goal of work situation:

To develop meta-skills and personal practice through self-evaluation, agreeing objectives, reflecting on practice, and actively learning to improve own performance in line with organisational requirements.

Brief outline:

This is about developing meta-skills and personal practice. This involves reflecting on and learning from practice; acting on feedback; agreeing and working towards own objectives for continuous personal and professional development. Individuals will be supported in their development, usually by their line manager.

Performance requirements

1. Identifying meta-skills and role specific skills regularly used in own work to assess strengths and improvement needs for personal and professional development
2. Discussing and agreeing SMART objectives for personal and professional development and to achieve business objectives
3. Discussing and agreeing appropriate development activities to improve own performance and to achieve business objectives
4. Completing development activities within agreed timescales to support and progress own performance
5. Acting on feedback to improve own performance and development
6. Reflecting on performance, meta-skills and specific skills developed in your role to identify and agree future development needs
7. Completing mandatory training in line with organisational requirements
8. Completing documentation required for personal and professional development in line with organisation policy and procedures

Knowledge and understanding requirements

1. The purpose and importance of meta-skills including their definitions and how they relate to own work
2. The importance of personal and professional development within own organisation and role
3. How to use reflective practice to identify gaps in role specific knowledge, skills and meta-skills
4. How to participate effectively in performance reviews
5. How to discuss and agree SMART objectives – Specific, Measurable, Achievable, Realistic, Time-bound
6. The importance of business and personal objectives in own development
7. Sources of up-to-date and appropriate information to support own development
8. The importance of maintaining well-being in own role and where to get support
9. How to use feedback to develop own skills and knowledge
10. Different learning models and styles and how to use these for own development

Goal of work situation:

To understand good environmental practices, the importance of sustainability and how to apply this within your area of responsibility

Brief outline:

This is about individuals understanding the negative impact of their work on the environment and the steps that can be taken to reduce this impact and promote sustainability. This could be local or global impact.

Performance requirements

There are no performance requirements for this work situation. This work situation provides knowledge and understanding requirements only.

Knowledge and understanding requirements

1. Why it is important to consider and apply sustainability in everything you do
2. The importance of assessing the negative environmental impact that your work could have and what needs to be considered
3. Environmental legislation and industry codes of practice that apply to your area of work
4. Different ways of working that could be adopted to reduce negative environmental impact and promote sustainability in your area of work
5. How to make responsible and sustainable use of natural resources in ways which minimise negative impacts on nature and natural habitats and promotes biodiversity
6. How to make responsible use of water, energy and other resources
7. The importance of energy efficiency and the ways in which energy usage can be monitored, reduced and replaced with renewable sources
8. The importance of making informed decisions on purchases, considering the carbon footprint and adopting the principles of the circular economy
9. The ways in which waste can be reduced and the principles of the waste management hierarchy
10. How pollution can be avoided in your area of work
11. How your work impacts on climate and environmental change and the actions that could be taken to respond to and mitigate the effects of this
12. How carbon emissions can be calculated and reduced and mitigated
13. The use of targets for reducing carbon emissions and improving environmental performance

14. The importance of constantly reviewing environmental performance and taking action to make improvements
15. The purpose of environmental management systems and other environmental quality marks
16. Where to find information and advice on grants, subsidies or other forms of funding or assistance to implement low carbon solutions



Optional work situations

A minimum of 3 optional work situations must be achieved

Inspecting and testing engineering assets.....	10-11
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Goal of work situation:

To safely inspect and test engineering assets to ensure safety and functional requirements are met.

Brief outline:

This involves establishing a status of engineering assets by applying appropriate inspection and testing procedures. This includes using available data and digital tools and making recommendations for improvement in accordance with technical specifications, instructions and organisational requirements.

Performance requirements

1. Selecting and obtaining resources required to undertake inspection and testing of engineering assets
2. Confirming resources are fit for purpose to undertake inspection and testing of engineering assets
3. Identifying areas of stored energy and isolating these in accordance with organisational requirements prior to commencing inspection and testing of engineering assets
4. Carrying out inspection activities on assets in accordance with organisational requirements
5. Setting up and carrying out tests on engineering assets in accordance with industry recognised methods and practices
6. Returning resources upon completion of work in accordance with organisational requirements
7. Recording and communicating test results and any recommendations in an appropriate format in accordance with organisational requirements
8. Reviewing results and carrying out further tests, if necessary, in accordance with organisational requirements
9. Checking all inspecting and testing engineering assets work meets quality requirements

Knowledge and understanding requirements

1. Principles and practice of inspection and testing
2. Resources (equipment, tools and consumables) associated with inspection and testing of engineering assets and how and when to use them
3. Terms used in inspection and testing of engineering assets
4. Others you need to communicate with regarding inspection and testing
5. Inspection and testing procedures, adjustment methods, certification processes, formulas and measuring instruments and how and when to use them
6. Requirements for test equipment to be maintained, used correctly and calibrated, and importance of retaining appropriate records
7. How to contribute to development of testing protocols to analyse products, systems, and components against set standards and specifications
8. How to set up and conduct tests of complete units and components with reference to operational and environmental conditions
9. Importance of understanding failure, variation and how to conduct root cause analysis
10. Limitations of specific inspection and testing techniques and resources and how to recognise when these are reached
11. How to identify need for further tests and how and when to implement them
12. Importance of impartiality in inspection and testing
13. How to communicate test outcomes and suggestions

14. Importance of retesting and when to do this
15. Quality requirements associated with inspection and testing of engineering assets

Goal of work situation:

To safely apply approved industry quality control processes and methods to support product and service delivery.

Brief outline:

This involves applying approved quality control processes for products and services to ensure they conform to quality standards and meet stakeholder requirements. It also involves making recommendations for improvement and communicating outcomes to stakeholders in accordance with technical specifications, instructions and organisational requirements.

Performance requirements

1. Selecting and obtaining resources required to undertake quality control
2. Confirming resources are fit for purpose to undertake quality control
3. Identifying areas of stored energy and isolating these in accordance with organisational requirements prior to commencing quality control
4. Carrying out quality control activities on engineering assets in accordance with industry recognised methods and practices
5. Organising sample taking with relevant others in accordance with organisational requirements
6. Taking representative samples in accordance with organisational requirements
7. Testing samples in accordance with organisational procedures
8. Interpreting sample results to take any necessary action in accordance with organisational procedures
9. Making recommendations for improvements in accordance with organisational requirements
10. Returning resources upon completion of work in accordance with organisational requirements
11. Checking conducting quality control work meets quality requirements

Knowledge and understanding requirements

1. Principles and practice of quality assurance and control
2. Resources (equipment, tools and consumables) associated with quality control and how and when to use them
3. Terms used in quality control
4. Others you need to communicate with regarding quality
5. How to contribute to asset recall processes
6. How to obtain representative samples and why this is important
7. How to label samples correctly and why this is important
8. Correct methods and procedures for testing samples
9. How to interpret sample results
10. How and when to make recommendations for improvements in accordance with organisational requirements
11. Differences between quality assurance and quality control and when to apply them
12. Quality requirements associated with quality control

Contributing to design-led solutions

Goal of work situation:

To contribute to developing new, and revised products using design-led solutions methodology.

Brief outline:

This involves developing and improving new, and existing products in accordance with design criteria, technical specifications, instructions and organisational requirements.

Performance requirements

1. Confirming user requirements and other relevant design criteria in accordance with organisational requirements
2. Identifying key problems to be solved using design-led solutions in accordance with organisational requirements
3. Selecting and obtaining resources required to contribute to design-led solutions
4. Confirming resources are fit for purpose to contribute to design-led solutions
5. Contributing to developing drafts, sketches and models in accordance with design criteria
6. Contributing to innovation and improvement of products in accordance with organisational requirements
7. Reviewing own contribution with relevant others in terms of design criteria in accordance with organisational requirements
8. Modifying design-led solutions in accordance with review outcomes
9. Returning resources upon completion of work in accordance with organisational requirements
10. Checking all contributing to design-led solutions work meets quality requirements
11. Confirming products meet design criteria and organisational requirements
12. Communicating outcomes of design-led solution to relevant others in accordance with organisational requirements

Knowledge and understanding requirements

1. Principles and practice of design-led solutions
2. Resources (equipment, tools and consumables) associated with application of design-led solutions and how and when to use them
3. Terms used in design-led solutions work
4. Methods and techniques used to develop drafts, sketches and models
5. Others you need to communicate with regarding design-led solutions
6. Purpose of design-led solutions
7. Range of design-led solutions approaches and how to apply them
8. Regulatory compliance requirements and the importance of them
9. Calculations to be carried out and how to do this
10. Quality requirements associated with design-led solutions

Producing engineering drawings using design software

Goal of work situation:

To safely produce engineering drawings and design data to meet a specified requirement.

Brief outline:

This involves using appropriate design software applications to develop 2D drawings and 3D models and designs to address a specific technical purpose in accordance with technical specifications, instructions and organisational requirements.

Performance requirements

1. Selecting and obtaining resources required to undertake design of engineering assets
2. Confirming resources are fit for purpose to undertake design of engineering assets
3. Developing 2D drawings by application of design software and in accordance with organisational requirements
4. Developing 3D models by application of design software and in accordance with organisational requirements
5. Sharing drawings and models with relevant others for feedback and comments
6. Making amendments to drawings and models in accordance with feedback from relevant others in accordance with organisational requirements
7. Returning resources upon completion of work in accordance with organisational requirements
8. Checking all producing engineering drawings using design software work meets quality requirements

Knowledge and understanding requirements

1. Principles and practice of design software
2. Resources (equipment, tools and consumables) associated with design of engineering assets and how and when to use them
3. Terms used in design of engineering assets
4. Others you need to communicate with regarding producing engineering drawings using design software
5. Purpose of design of engineering assets
6. Range of software options associated with design software
7. Regulatory compliance requirements
8. Calculations to be carried out and how to do this
9. Quality requirements associated with producing engineering drawings

Goal of work situation:

To safely start up engineering processes for production of an engineering asset.

Brief outline:

This involves using appropriate work instructions and information to prepare the equipment and materials and safely start engineering processes for production of an engineering asset in accordance with technical specifications, instructions and organisational requirements.

Performance requirements

1. Selecting and obtaining resources required to start-up engineering processes
2. Confirming resources are fit for purpose to undertake start-up of engineering processes
3. Identifying areas of stored energy and isolating these in accordance with organisational requirements prior to commencing start-up of engineering processes
4. Checking operating parameters are established in accordance with organisational requirements
5. Checking work area and equipment to be used are in a safe and functional condition
6. Checking materials to be used are of correct identity, quality, and quantity to begin processing
7. Starting operation and operating equipment safely in accordance with organisational requirements
8. Dealing with deviations from specified parameters promptly, minimising loss and damage in accordance with organisational requirements
9. Returning resources upon completion of work in accordance with organisational requirements
10. Checking all starting up the engineering processes work meets quality requirements

Knowledge and understanding requirements

1. Principles and practice of engineering processes
2. Resources (equipment, tools and consumables) associated with start-up of engineering processes and how and when to use them
3. Terms used in start-up of engineering processes
4. Others you need to communicate with regarding starting up
5. How to interpret and check operating parameters
6. Functions and uses of different types of equipment, accessories and components used during operation
7. Importance of confirming status of equipment
8. Importance of checking materials against specification
9. How to deal with unexpected results and deviations from specification
10. Importance of minimising loss and damage
11. Quality requirements associated with start-up of engineering processes

Goal of work situation:

To safely control engineering processes during production of engineering assets.

Brief outline:

This involves using appropriate work instructions and information to ensure engineering processes are controlled during production of engineering assets in accordance with technical specifications, instructions and organisational requirements.

Performance requirements

1. Selecting and obtaining resources required to control engineering processes
2. Confirming resources are fit for purpose to undertake control of engineering processes
3. Identifying areas of stored energy and isolating these in accordance with organisational requirements prior to commencing control of engineering processes
4. Checking and setting necessary specifications and operating parameters in accordance with operating instructions
5. Checking equipment and materials are ready for processing operations in accordance with organisational requirements
6. Checking operational data and analysing using appropriate methods and techniques in accordance with organisational requirements
7. Adjusting controls to produce engineering assets to specified quantity, quality and minimise waste
8. Identifying deviations from operating parameters specifications in accordance with operating instructions
9. Identifying possible faults and causes of deviations from operating parameters in accordance with organisation requirements
10. Taking relevant corrective action to restore process to within required operating parameters
11. Checking processes are operating according to specifications and within operating parameters
12. Returning resources upon completion of work in accordance with organisational requirements

Knowledge and understanding requirements

1. Principles and practice of engineering processes
2. Resources (equipment, tools and consumables) associated with control of engineering processes and how and when to use them
3. Terms used to control engineering processes
4. Others you need to communicate with regarding controlling engineering processes
5. How to interpret and check operating parameters
6. Importance of checking materials to meet specifications
7. Importance of checking controls meet operating instructions
8. Methods of obtaining, analysing and interpreting process data
9. How to adjust engineering processes to meet specified quality and quantity whilst minimising waste
10. How to deal with unexpected results and deviations from specifications
11. What deviations may occur from norm, and how to recognise them and any consequences
12. Importance of remedial action and how to deal with this
13. Methods of investigating engineering process faults and causes
14. Corrective action options to take regarding engineering process control
15. Quality requirements associated with controlling engineering processes

13. Checking all controlling engineering processes work meets quality requirements

Closing down engineering processes

Goal of work situation:

To safely close down engineering processes on production of engineering assets.

Brief outline:

This involves using appropriate work instructions and information to close down engineering processes in accordance with technical specifications, instructions and organisational requirements.

Performance requirements

1. Selecting and obtaining resources required to close-down engineering processes
2. Confirming resources are fit for purpose to undertake close-down of engineering processes
3. Identifying areas of stored energy and isolating these in accordance with organisational requirements prior to commencing close-down of engineering processes
4. Checking close-down operation instructions to confirm they are clear and complete
5. Checking equipment meets conditions for close-down to commence
6. Confirming services are isolated in accordance with organisational requirements
7. Identifying and closing down services not required in accordance with organisational procedures
8. Closure of the engineering processes in accordance with organisational procedures
9. Returning resources upon completion of work in accordance with organisational requirements
10. Checking all closing down engineering processes work meets quality requirements

Knowledge and understanding requirements

1. Principles and practice of engineering processes
2. Resources (equipment, tools and consumables) associated with closing down an engineering processes and how and when to use them
3. Terms used in closing down engineering processes
4. Others you need to communicate with regarding close down
5. How to interpret and check operating parameters
6. How to deal with unexpected results and deviations from specifications
7. How to check equipment is ready for close-down to commence
8. Methods used to close-down engineering processes
9. How to identify and close-down those services not required
10. Importance of minimising any loss and damage during close down
11. How to undertake material reconciliation
12. Problems that may occur in operations and how to deal with them
13. Issues of security and confidentiality and how to deal with them
14. Quality requirements associated with closing down engineering processes

Goal of work situation:

To safely replace engineering assets to optimise asset performance and life.

Brief outline:

This involves replacing engineering assets identified as either faulty, non-performing and lified in accordance with technical specifications, instructions and organisational requirements.

Performance requirements

1. Selecting and obtaining resources required to undertake replacement of engineering assets
2. Confirming resources are fit for purpose to undertake replacement of engineering assets
3. Identifying areas of stored energy and isolating these in accordance with organisational requirements prior to commencing replacement of engineering assets
4. Carrying out replacement activities on engineering assets in accordance with industry recognised methods and practices
5. Testing replaced engineering assets are functioning as required in accordance with organisational requirements
6. Checking cause of need for replacement has been removed in a practical, safe and sustainable manner
7. Returning resources upon completion of work in accordance with organisational requirements
8. Checking all replacing engineering assets work meets quality requirements

Knowledge and understanding requirements

1. Principles and practice of engineering asset replacement
2. Resources (equipment, tools and consumables) associated with replacement of engineering assets and how and when to use them
3. Terms used in replacement of engineering assets
4. Others you need to communicate with regarding replacement of engineering assets
5. Relative advantages and limitations of repair and replace
6. Situations requiring repair or replacement
7. Replacement techniques and methods and how and when to apply them
8. How to test replacement is successful and sustainable and engineering assets are functioning as required
9. How to check cause of need for replacement has been removed in a practical, safe and sustainable manner
10. Quality requirements associated with replacement of engineering assets

Goal of work situation:

To safely install engineering assets to meet a specified requirement.

Brief outline:

This involves using manufacturer instructions and information to prepare for and safely install, position, connect and secure a range of engineering assets (parts, components, consumables and systems associated with engineering plant and equipment) and subsequent completion of all relevant documentation and records in accordance with technical specifications, instructions and organisational requirements.

Performance requirements

1. Selecting and obtaining resources required to undertake installation of engineering assets
2. Confirming resources are fit for purpose to undertake installation of engineering assets
3. Identifying areas of stored energy and isolating these in accordance with organisational requirements prior to commencing installation of engineering assets
4. Measuring and marking out locations for fitting and fixing engineering assets in accordance with drawings and other relevant sources of information
5. Fitting, fixing and connecting engineering assets in accordance with drawings and other relevant sources of information
6. Performing visual and manual checks to confirm engineering assets have been fixed, fitted and connected in accordance with drawings and other relevant sources of information
7. Testing integrity of systems against specification
8. Returning resources upon completion of work in accordance with organisational requirements
9. Checking all installing engineering assets work meets quality requirements

Knowledge and understanding requirements

1. Principles and practice of engineering installation
2. Resources (equipment, tools and consumables) associated with installation of engineering assets and how and when to use them
3. Terms used in installation of engineering assets
4. Others you need to communicate with regarding installation
5. Methods and techniques for fitting, fixing and connecting engineering assets
6. Methods, techniques and procedures used to test integrity of installed assets
7. How to obtain acceptance of installed engineering assets and how to deal with cases where acceptance is not received
8. Quality requirements associated with installation of engineering assets

Goal of work situation:

To safely ensure engineering assets are functioning effectively.

Brief outline:

This involves carrying out checks and functionality tests to ensure engineering assets are working in accordance with specifications and client requirements and subsequent completion of relevant documentation and records in accordance with technical specifications, instructions and organisational requirements.

Performance requirements

1. Selecting and obtaining resources required to undertake commissioning of engineering assets
2. Confirming resources are fit for purpose to undertake commissioning of engineering assets
3. Identifying areas of stored energy and isolating these in accordance with organisational requirements prior to commencing commissioning of engineering assets
4. Actively commissioning engineering assets adjusting control features in accordance with specifications
5. Completing commissioning activity in accordance with industry recognised methods and practices
6. Returning resources upon completion of work in accordance with organisational requirements
7. Providing information to relevant others about engineering assets
8. Contribute to handover procedures in accordance with organisational requirements
9. Checking all commissioning engineering assets work meets quality requirements

Knowledge and understanding requirements

1. Principles and practice of commissioning
2. Resources (equipment, tools and consumables) associated with commissioning engineering assets and how and when to use them
3. Terms used in commissioning of engineering assets
4. Others you need to communicate with regarding commissioning
5. Methods and techniques for commissioning engineering assets
6. Asset protection requirements and techniques before going live
7. Types and purposes of information to be communicated
8. Procedures for handling sensitive information
9. How to obtain acceptance of commissioned engineering assets and how to deal with cases where acceptance is not received
10. Quality requirements associated with commissioning engineering assets

Decommissioning engineering assets

Goal of work situation:

To safely take engineering assets out of active service to meet specified requirements.

Brief outline:

This involves taking engineering assets out of active service including on a permanent and semi-permanent basis, ensuring engineering assets and sites are left in safe conditions. This includes completing relevant documentation and records in accordance with technical specifications, instructions and organisational requirements.

Performance requirements

1. Selecting and obtaining resources required to undertake decommissioning of engineering assets
2. Confirming resources are fit for purpose to undertake decommissioning of engineering assets
3. Identifying areas of stored energy and isolating these in accordance with organisational requirements prior to commencing decommissioning of engineering assets
4. Removing engineering assets from active service in accordance with specification
5. Completing decommissioning activity in accordance with industry recognised methods and practices
6. Returning resources upon completion of decommissioning work in accordance with organisational requirements
7. Providing information to relevant others about engineering asset conditions in accordance with organisation requirements
8. Contribute to handover procedures in accordance with organisational requirements
9. Checking all decommissioning engineering assets work meets quality requirements

Knowledge and understanding requirements

1. Principles and practice of decommissioning
2. Resources (equipment, tools and consumables) associated with decommissioning engineering assets and how and when to use them
3. Terms used in decommissioning of engineering assets
4. Others you need to communicate with regarding decommissioning
5. Methods and techniques for decommissioning engineering assets and how to apply these
6. Types and purposes of information to be communicated
7. Procedures for handling sensitive information and how to use them
8. How to obtain acceptance of decommissioned engineering assets and how to deal with cases where acceptance is not received
9. Quality requirements associated with decommissioning of engineering assets

Providing effective leadership

Goal of work situation:

To provide positive and effective leadership to teams to enable, objectives, goals, and targets to meet organisational requirements

Brief outline:

This involves leading a team to achieve defined outcomes and targets required by the organisation. This includes identifying team members roles and responsibilities, setting individual and collective objectives, and monitoring and reviewing performance.

Performance requirements

1. Prioritising and setting realistic and achievable goals and objectives for your team, in accordance with targets set for yourself or for the work area/activity
2. Determining and agreeing individual roles and responsibilities
3. Empowering team members to work autonomously within agreed boundaries
4. Leading your team successfully to meet agreed objectives and goals
5. Monitoring the performance of your team against goals and targets set
6. Communicating performance and outcomes to relevant people in ways that suit their needs
7. Requesting feedback from others and acting on this to improve your leadership practice
8. Agreeing and recording actions from meetings in line with organisational requirements

Knowledge and understanding requirements

1. Leadership models, styles, qualities, and self-awareness and how to select and apply these to different situations and team members
2. How team dynamics impact on organisational behaviours, including cultural and values and differences
3. How to work cost effectively and efficiently
4. How to conduct a team performance review and how to support the team in problem solving/creative thinking activities and taking their own decisions.
5. Organisational policies and procedures on fairness and inclusion and the importance of complying with these
6. The ways communication may need to be adapted for team members and others
7. Listening, questioning and coaching techniques to achieve team outcomes.
8. The business targets set for your area of responsibility, and how to prioritise, set personal, individual and team targets to achieve them including action planning
9. How to monitor and check that your team is working to identified quality and safety standards
10. How to get and make use of feedback from team members and other colleagues on your leadership performance,
11. The types of difficulties and challenges that may arise when leading teams and ways of identifying and addressing them
12. How to escalate problems with team members performance and relationships in line with organisational processes

Applying methods and principles in project management

Goal of work situation:

This work situation involves using project management tools to plan, organise and monitor the progress of activities to achieve production quality performance indicators.

Brief outline:

This is about applying methods and principles of project management in line with organisational requirements. This includes ensuring activities are delivered in accordance with the business case and safe systems of work, and involves liaising with and reporting progress to stakeholders, ensuring activities contribute to key milestones and deliverables.

Performance requirements

1. Providing support to prepare business cases for approval of activities
2. Identifying roles, responsibilities and skill sets needed for project activities and resources
3. Planning and scheduling projects in line with agreed objectives, timescales, and organisational requirements
4. Managing activities in line with plans and to achieve milestones
5. Managing change in line with organisational procedures
6. Escalating to relevant personnel where there are deviations from plans
7. Identifying, agreeing, and implementing contingencies to mitigate problems
8. Communicating plan progress in formats to meet the needs of all relevant stakeholders
9. Reporting on progress in line with organisational reporting procedures
10. Collating and evaluating lessons learned to contribute to the continuous improvement of activities

Knowledge and understanding requirements

1. Relevant legislation and codes of practice, safe systems of work, risk and impact assessments for activities
2. The principles and approaches to developing good business cases
3. Different methodologies to plan and deliver activities and how to apply these
4. The tools and processes for identifying and analysing risks and opportunities and how to use them
5. Techniques and tools for monitoring and reviewing risks including when and how to escalate to management
6. Quantitative and qualitative measures of risk analysis and how to apply these
7. The importance of monitoring and controlling project performance including accountability
8. Industry specific tools and software for monitoring performance
9. The importance of establishing an agreed change control process, and the impact and consequences that changes can have on schedule, resources, and budget
10. The type of changes that may affect key performance criteria including time, cost, quality, and business case
11. The importance of contingency plans

12. The importance of evaluating and monitoring the benefits and challenges of activities and how to do this

The relationship between meta-skills and work situations

Work situation	Meta skills alignment											
	Adapting	Collaborating	Communicating	Creativity	Critical thinking	Curiosity	Feeling	Focussing	Initiative	Integrity	Leading	Sense making
Performing core engineering activities	✓	✓	✓		✓	✓			✓	✓		✓
Developing meta-skills and personal practice	✓	✓	✓			✓	✓		✓			
Understanding importance of environmental good practice and sustainability	✓		✓			✓	✓		✓	✓		
Inspecting and testing engineering assets	✓		✓		✓	✓		✓	✓			✓
Conducting quality control		✓	✓			✓		✓		✓		✓
Contributing to designed solutions		✓	✓	✓		✓			✓	✓		
Producing engineering drawings using design software		✓	✓	✓		✓		✓		✓		✓
Starting up engineering processes		✓	✓		✓					✓		✓
Controlling engineering processes		✓	✓		✓					✓		✓
Closing down engineering processes		✓	✓		✓				✓	✓		✓

The table above indicates where there are opportunities to develop and evidence meta-skills in each work situation within the occupation profile. Please note, this information is for guidance, and indicates where meta-skills are explicit rather than an exhaustive list. There may be opportunities for individuals to develop and evidence other meta-skills when carrying out their role.

The relationship between meta-skills and work situations

Work situation	Meta skills alignment											
	Adapting	Collaborating	Communicating	Creativity	Critical thinking	Curiosity	Feeling	Focussing	Initiative	Integrity	Leading	Sense making
Replacing engineering assets		✓	✓		✓			✓	✓	✓		✓
Installing engineering assets	✓		✓		✓			✓	✓	✓		✓
Commissioning engineering assets	✓	✓	✓		✓			✓		✓		
Decommissioning engineering assets	✓	✓	✓		✓			✓		✓		
Providing effective leadership	✓	✓	✓				✓		✓	✓	✓	
Applying methods and principles in project management	✓	✓	✓		✓				✓		✓	✓

The table above indicates where there are opportunities to develop and evidence meta-skills in each work situation within the occupation profile. Please note, this information is for guidance, and indicates where meta-skills are explicit rather than an exhaustive list. There may be opportunities for individuals to develop and evidence other meta-skills when carrying out their role.

The relationship between National Occupational Standards and work situations

The table below indicates where there are links between National Occupational Standards and each work situation within the occupation profile

Work situation	National Occupational Standards Alignment		
Performing core engineering activities	<ul style="list-style-type: none"> Supporting Activities in Engineering Construction (ECITB) ECICM03 Performing Engineering Operations Suite 2 (Enginuity) ECIOSM03 	<ul style="list-style-type: none"> Land-based Engineering Operations (Lantra) LANCS10 Core Mandatory Suite (Engineering) (Enginuity) SEMEM386 	<ul style="list-style-type: none"> Common NOS (ECITB) ECIEXP03
Inspecting and testing engineering assets	<ul style="list-style-type: none"> Engineering Maintenance Suite 3 (Enginuity) SEMSEC302 Aeronautical Engineering Suite 3 (Enginuity) SEMCOMP312 Automotive Engineering Suite 3 (Enginuity) SEMMAN2303 Condition Monitoring (ECITB) ECICM05 	<ul style="list-style-type: none"> Non Destructive Testing (ECITB) ECINDT06 Maintaining Plant and Systems - (ECITB) ECIOSM02 Land-based Engineering Operations (Lantra) LANCS10 Food and Drink (NSAFD) IMPHS307 	<ul style="list-style-type: none"> Bulk Liquid Operations (Cogent) COGBLO8 Electricity Power Utilities (EU Skills) EUSPTD002 Gas Network Construction (EU Skills) EUSMUNC2 Water Network Construction (EU Skills) EUSWNC2
Conducting quality control	<ul style="list-style-type: none"> Condition Monitoring (ECITB) ECICM05 Aeronautical Engineering Suite 3 (Enginuity) SEMCOMP312 	<ul style="list-style-type: none"> Rail Engineering Signalling Suite 3 (Enginuity) SEMRES217 Advanced Manufacturing (Enginuity) SEMADM306 	<ul style="list-style-type: none"> Maintaining Plant and Systems (ECITB) ECIOSM02

The relationship between National Occupational Standards and work situations

The table below indicates where there are links between National Occupational Standards and each work situation within the occupation profile

Work situation	National Occupational Standards Alignment		
Contributing to designed solutions	<ul style="list-style-type: none"> Design and Draughting (ECITB) ECIDD06 	<ul style="list-style-type: none"> Engineering Technical Support Suite 3 (Enginuity) SEMSEC306 	
Producing engineering drawings using design software	<ul style="list-style-type: none"> Design and Draughting (ECITB) ECIDD06 	<ul style="list-style-type: none"> Engineering Technical Support Suite 3 (Enginuity) SEMSEC306 	<ul style="list-style-type: none"> Aeronautical Engineering Suite 3 (Enginuity) SEMCOMP312
Starting up engineering processes	<ul style="list-style-type: none"> Advanced Manufacturing (Enginuity) SEMADM306 	<ul style="list-style-type: none"> Mechanical Manufacturing Engineering Suite 3 (Enginuity) SEMADM306 	<ul style="list-style-type: none"> Bulk Liquid Operations (Cogent) COGBLO8 Project Management (ECITB) ECIDD03
Controlling engineering processes	<ul style="list-style-type: none"> Aeronautical Engineering Suite 3 (Enginuity) SEMCOMP312 Advanced Manufacturing (Enginuity) SEMADM306 Mechanical Manufacturing Engineering Suite 3 (Enginuity) SEMADM306 	<ul style="list-style-type: none"> Bulk Liquid Operations (Cogent) COGBLO8 Water Network Construction Operations (EU Skills) EUSWNC2 Project Control, Estimating, Planning & Cost Engineering (ECITB) ECIPC68 	<ul style="list-style-type: none"> Engineering (ECITB) ECIPC68 Project Management (ECITB) ECIDD03
Closing down engineering processes	<ul style="list-style-type: none"> Advanced Manufacturing (Enginuity) SEMADM306 	<ul style="list-style-type: none"> Mechanical Manufacturing Engineering Suite 3 (Enginuity) SEMADM306 	<ul style="list-style-type: none"> Bulk Liquid Operations (Cogent) COGBLO8 Project Management (ECITB) ECIDD03

The relationship between National Occupational Standards and work situations

The table below indicates where there are links between National Occupational Standards and each work situation within the occupation profile

Work situation	National Occupational Standards Alignment		
Replacing engineering assets	<ul style="list-style-type: none"> • Engineering Maintenance Suite 3 (Enginuity) SEMSEC302 • Electrical and Electronic Engineering Suite 3 (Enginuity) SEMADM306 • Maintaining Plants and Systems - Electrical (ECITB) ECIOSM02 • Maintaining Plant and Systems - Instrumentation and Control (ECITB) ECICM05 • Maintaining Plant and Systems - Mechanical (ECITB) ECIIICES07 • Aeronautical Engineering Suite 3 (Enginuity) SEMCOMP312 • Automotive Engineering Suite 3 (Enginuity) SEMMAN2303 • Mechanical Manufactruing Engineering Suite 3 (Enginuity) SEMADM306 	<ul style="list-style-type: none"> • Rail Engineering Signalling Suite 3 (Enginuity) SEMRES217 • Rail Engineering Traction & Rolling Stock Suite 3 (Enginuity) SEMRETRS319 • Rail Engineering Telecoms Suite 3 (Enginuity) SEMRET324 • Rail Engineering Signalling Suite 3 (Enginuity) SEMRES217 • Engineering Toolmaking Suite 3 (Enginuity) SEMMAN2303 • Insallation and Commissioning Suite 3 (Enginuity) SEMAE3196 • Advanced Manufactruing (Enginuity) SEMADM306 • Marine Engineering Suite 3 (Enginuity) SEMMAN2303 	<ul style="list-style-type: none"> • Land-based Engineering Operations (Lantra) LANCS10 • Food and Drink (NSAFD) IMPHS307 • Electricity Power Utilities (EU Skills) EUSPTD002 • Gas Netwrok Construction (EU Skills) EUSMUNC2 • Wind Turbines (EU Skills) EUSWT10 • Engineering Maintenance in Food Manufacture (NSAFD) IMPEM107 • Bulk Liquid Operations (Cogent) COGBLO8

The relationship between National Occupational Standards and work situations

The table below indicates where there are links between National Occupational Standards and each work situation within the occupation profile

Work situation	National Occupational Standards Alignment		
Installing engineering assets	<ul style="list-style-type: none"> Installing Plant and Systems (ECITB) ECIICSE01 Supporting Activities in Engineering Construction (ECITB) ECICM03 Land-Based Engineering Operations (Lantra) LANCS10 	<ul style="list-style-type: none"> Composite Engineering Suite 3 (Enginuity) SEMCOMP312 Wind Turbines (EU Skills) EUSWT10 Food and Drink (NSAFD) IMPHS307 	<ul style="list-style-type: none"> Electricity Power Utilities (EU Skills) EUSPTD002 Wind Turbines (EU Skills) EUSWT10 Water Network Construction Operations (EU Skills) EUSWNC2
Commissioning engineering assets	<ul style="list-style-type: none"> Installation, Testing and Commissioning (ECITB) ECIICSE07 Installation and Commissioning Suite 3 (Enginuity) SEMAE3196 Gas Network Construction (EU Skills) EUSMUNC2 	<ul style="list-style-type: none"> Mechanical Manufacturing Engineering Suite 3 (Enginuity) SEMADM306 Advanced Manufacturing (Enginuity) SEMADM306 Bulk Liquid Operations (Cogent) COGBLO8 	<ul style="list-style-type: none"> Electricity Power Utilities (EU Skills) EUSPTD002 Water Network Construction Operations (EU Skills) EUSWNC2
Decommissioning engineering assets	<ul style="list-style-type: none"> Mechanical Manufacturing Engineering Suite 3 (Enginuity) SEMADM306 Advanced Manufacturing (Enginuity) SEMADM306 	<ul style="list-style-type: none"> Bulk Liquid Operations (Cogent) COGBLO8 Electricity Power Utilities (EU Skills) EUSPTD002 	<ul style="list-style-type: none"> Gas Network Construction (EU Skills) EUSMUNC2 Water Network Construction Operations (EU Skills) EUSWNC2

The relationship between National Occupational Standards and work situations

The table below indicates where there are links between National Occupational Standards and each work situation within the occupation profile

Work situation	National Occupational Standards Alignment		
Providing effective leadership	<ul style="list-style-type: none"> • Business Improvement Techniques Suite 2 (Enginuity) 	<ul style="list-style-type: none"> • Management and Leadership (Instructus) 	
Applying methods and principles in project management	<ul style="list-style-type: none"> • Engineering and Manufacture Suite 4 (Enginuity) • Project Management (ECITB) 	<ul style="list-style-type: none"> • Engineering Leadership and Management Suite 4 (Enginuity) 	<ul style="list-style-type: none"> • Industrial Design (Creative and Cultural Skills)