

Assisting in the planning of engineering activities

Overview

This standard identifies the competences you need to assist in the planning of engineering activities, in accordance with approved procedures. You will be expected to support colleagues in the production of plans for a range of engineering activities, such as component/product manufacturing, assembly activities, installation, material processing and finishing, testing and trialling, commissioning, planned maintenance, lifting, moving and transporting of goods or materials, and plans for capability studies or equipment replacement programs.

You will assist in establishing the activities that must be carried out, and the methods and resources to be used, and you will contribute to creating a detailed plan of operation. You will be required to complete your work within agreed timescales whilst ensuring that the activities you are responsible for conform to organisational and safety requirements.

Your responsibilities will require you to comply with organisational policy and procedures for the planning activities undertaken, and to report any problems with the planning activities that you cannot personally resolve, or that are outside your permitted authority, to the relevant people. You will be expected to work to instructions, either alone or in conjunction with others, taking personal responsibility for your own actions and for the quality and accuracy of the work that you carry out.

Your underpinning knowledge will be sufficient to provide a sound basis for your work, and will enable you to adopt an informed approach to the techniques and procedures used when planning engineering activities. You will have an understanding of the engineering activities being planned, in adequate depth to provide a sound basis for assisting in the planning process to the required standard.

You will be aware of any health, safety and environmental requirements applicable to the activities being planned. You will be required to demonstrate safe working practices throughout, and will understand the responsibility you owe to yourself and others in the workplace.

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Performance criteria

You must be able to:

1. collect the information needed to prepare the plan
2. identify health and safety issues and safe working practices and procedures that must be followed
3. identify the operations to be carried out and determine their sequence
4. establish which methods are required and what resources are to be used
5. identify any special requirements and incorporate them in the plan
6. estimate timescales required
7. prepare and record the plan
8. inform the appropriate people when the plan is completed
9. deal effectively with problems within your control and report those that cannot be solved

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Knowledge and understanding

You need to know and understand:

1. how to access information on health and safety regulations and guidelines relating to the engineering activities to be used and plans being produced
2. the implications of not taking account of legislation, regulations, standards and guidelines when producing the engineering plans
3. how to obtain information on the engineering requirements, and the type of information that is available (such as customer order requirements and instructions, quality control requirements, product specification, manufacturing methods)
4. how to access and use the appropriate information and documentation systems
5. the types of information that should be included in the engineering plans (such as activities to be carried out, sequence in which they must be carried out, timescales, resource requirements, health and safety issues)
6. how to extract information from drawings, documents and related specifications
7. the materials, formats, codes and conventions that are used in preparing the plans
8. the factors to be taken into account when preparing the plans, especially those covering working conditions and safety
9. the main types of resource involved with different kinds of engineering activity
10. the normal timescales for carrying out specific engineering activities, and how and why they vary
11. the products (or assets) involved in the activity being planned, and their availability
12. the development of the engineering plans (to include both master documents and working instructions)
13. how to prepare the plans (to include the structure, style, clarity and compliance with relevant standards)
14. the control procedure for ensuring that the plans are maintained up to date
15. the procedures for changing the plans, and why control procedures are used
16. the importance of maintaining records; what needs to be recorded, and where records are kept
17. why contingency plans need to be drawn up
18. the types of problem that can occur during the planning activities
- 19.

the extent of your own authority and to whom you should report in the event of

problems that you cannot resolve

Scope/range related to performance criteria

1. Carry out **all** of the following whilst assisting with the production of the engineering plans:
 1. use the correct issue of company information
 2. collect relevant information on the engineering requirements, operations, methods and resources
 3. check the availability of resources required
 4. ensure that health and safety regulations and safe working practices are taken into account
 5. ensure that the influence of working conditions is recognised and included in the plans
 6. resolve any problems as they occur, within your level of responsibility
 7. produce the engineering plans in the appropriate formats
2. Assist in producing engineering plans for **one** of the following:
 1. drawing/design activities (such as mechanical, electrical/electronic, motor vehicle, aerospace, marine)
 2. manufacturing activities (such as machining, detail fitting, fabrication of components, pressing)
 3. material processing activities (such as heat treatment, casting, injection moulding, purification)
 4. composite manufacture (such as wet lay-up, pre-preg laminating, resin infusion, blow moulding)
 5. finishing activities (such as stripping finishes, painting, plating, anodising, veneering, lacquering)
 6. assembly activities (such as mechanical, structural, fluid power, electrical/electronic, woodworking)
 7. installation activities (such as mechanical, electrical/electronic, avionic, structural, environmental equipment)
 8. plant and equipment (such as site preparation, plant layout, equipment changeover, equipment replacement)
 9. equipment capability studies/performance measurement
 10. movement of materials, components or finished goods
 11. engineering safety audits or risk assessments
 12. business improvement activities
 13. quality control/quality assurance
 14. maintenance activities
 15. modification and repair activities
 16. commissioning/decommissioning
 17. testing and trialling
 18. research and development
 19. engineering support services

3. Assist in preparing plans that include details for **six** of the following:

1. description of the activities to be carried out
2. the sequence in which the activities will take place
3. the documentation to be used (such as drawings, specifications, quality assurance, surveys)
4. the people required who have the necessary skills and knowledge
5. the raw materials required (such as type of material, form of material, amount of material)
6. consumable materials required (such as welding accessories, masking mediums, lubricants)
7. bought-in standard components (such as bearings, electrical or electronic components, fluid power components, mechanical fasteners)
8. equipment required (such as hand tools, power tools, machinery, lifting and handling equipment)
9. measuring or test equipment (such as mechanical measuring, electrical measuring)
10. any outside support services required (such as material treatments, specialist lifting and moving equipment)
11. any special environmental/legislative requirements that must be met
12. special/specific safety equipment required (such as fume extraction, fire equipment)
13. space required
14. financial considerations
15. the timescales to be met
16. utilities required

4. Ensure that plans include any relevant regulations, standards and guidelines from **all** of the following, as appropriate:

1. organisational guidelines and codes of practice
2. customer standards and requirements
3. equipment manufacturer's operating specification/range
4. BS and/or ISO standards
5. health, safety and environmental requirements
6. recognised compliance agency/body's standards

5. Record and present the plans to the appropriate people, using **one** of the following methods:

1. specific company documentation
2. written or typed report
- 3.

verbal report

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Developed by	Enginuity
Version Number	2
Date Approved	28 Feb 2015
Indicative Review Date	30 Mar 2018
Validity	Current
Status	Original
Originating Organisation	Semta
Original URN	SEMTS2-16
Relevant Occupations	Engineering, Engineering and Manufacturing Technologies
Suite	Engineering Technical Support Suite 2
Keywords	Engineering; technical support; planning; approved procedures; manufacturing; assembly; installation; testing; trialling; maintenance