

Manufacturing & Production Engineer

What is Manufacturing and what is Production?

In its simplest form Manufacturing is the process of taking something from its base state, be it a piece of raw material or a collection of sub assembly components, and transforming it through a range of processes into a component or sub assembly. In the case of materials these processes can include casting, forging, machining, forming/pressing/bending, and welding amongst others. For sub assemblies these processes can include welding, bonding, bolting, and clipping amongst others.

Production uses these manufactured components and subassemblies to build the product to the designs specified by design/ engineering. This is carried out via the use of assembly equipment (in the case of automated production lines etc.) or by skilled labour using appropriate tools.

Together Manufacturing and Production transform the electronic/paper based designs of engineering into a tangible product.

What does the role entail?

Engineering roles in Manufacturing and Production can come in a variety of forms. Whilst the two areas have different objectives the roles within the functions are relatively comparable. These fall into the following areas:

Engineering	This involves looking into the best method to produce the product. In manufacturing this could be assessing what and how many different operations are required to manufacture a particular component or determining a sequence of welding to ensure distortion is minimised. For Production this could include examining the sequence of build to ensure the most practical efficient process is used.
Improvements	For this style of role the engineer is looking at how the process to manufacture/produce can be made more efficient. This will often involve investigating alternative methods of manufacture/production with the potential for new techniques, equipment, or technologies.
Management	As well as looking at manufacturing/production methods there is a need within both Manufacturing and Production for technical/engineering managers to control the processes. Typically these will involve coordinating the work force (often multiple trades) to ensure process goes to cost and to schedule (to the deadlines within the plan of work). There is often a significant element of problem solving and liaising with other departments.

What sort of person would be suited to the role?

Many of the Manufacturing and Production roles are set in a challenging, fast paced environment. These are ideally suited to people who enjoy using technical knowledge to solve real world problems and who are resourceful with a cool head under pressure. The ability to see tasks through to completion and ensure all details are complete is advantageous. As much of the work involves liaising with other team members and people from other departments the roles suit someone with good interpersonal skills.

What sort of skills and qualifications are required/desired

For roles in Manufacturing and Production a technical background is advantageous and this can be further developed with relevant experience/exposure. Good interpersonal skills are a must due to the large involvement of liaising with team members and personnel from other departments. An ability to question, can this be done in a better way, is also advantageous.

How does the role contribute to the business?

Manufacturing and Production transform the intangible design and concepts of engineering into the physical products that the company sells. Both are vital to the process of creating affordable products to the quality the customer expects.

What career progression may be possible

The roles people undertake within Manufacturing and Production readily lend themselves to future development and career advancement. The skills in organising, assessing, improving, and interpersonal communication/management form a firm foundation from which career advancement can be built on.

Within the Manufacture and Production worlds there are also options for more senior positions such as manufacturing/production managers and technical/manufacturing specialists. The people management skills which can be developed can readily lead to larger roles out-with the departments.

Many graduates joining Manufacturing & Production have an engineering, manufacturing or science background and if so, they are encouraged to pursue CEng where Submarines is accredited by IMechE, IET, IMarEST, RINA, IoP & IoM3.

For a graduate to consider working in Manufacturing and Production; the candidate would have an engineering, manufacturing/production or science related degree with a minimum 2:1 result.