



LIFE AS A

PRODUCTION ENGINEER

WORK SKILLS, INTEREST & COMPETENCIES

Introduction

Production engineering is a combination of [manufacturing](#) technology with [management science](#). A production engineer typically has a wide knowledge of [engineering](#) practices and is aware of the management challenges related to production. The goal is to accomplish the production process in the smoothest, most-judicious and most-economic way.

Production Engineers usually work in the manufacturing world. Their primary job is to make sure that products are produced at the required speed to match up with the needs of/demand from customers. They also ensure that products are constructed properly and sometime calculate yield to determine waste within a manufacturing facility.

Production engineering encompasses the application of [castings](#), machining processing, [joining processes](#), metal cutting & tool design, [metrology](#), machine tools, [machining](#) systems, [automation](#), jigs and fixtures, and die and mould design and material science and design of automobile parts and machine designing and manufacturing. Production engineering also overlaps substantially with [manufacturing engineering](#) and [industrial engineering](#).

In [industry](#), once the design is realized, production engineering concepts regarding work-study, [ergonomics](#), [operation research](#), manufacturing management, [materials management](#), production planning, etc., play important roles in efficient production processes. These deal with [integrated design](#) and efficient planning of the entire manufacturing system, which is becoming increasingly complex with the emergence of sophisticated production methods and control systems.

Production Engineers are involved with the process of manufacturing from planning to packaging of the finished product. They work with tools such as robots, programmable and numerical controllers, and vision system to fine tune assembly, packaging, and shipping facilities. They examine flow and the process of manufacturing, looking for ways to streamline production, improve turnaround, and reduce costs. Often, a Production Engineer will work with a prototype, usually created electronically with computers, to plan the final manufacturing process. In a globally competitive marketplace, it is the job of the Production Engineer to figure out methods and systems to produce a product in an efficient, cost-effective way to provide a marketing edge for the final product.

Production Engineering graduates may work in any field that produces goods -- from

automobiles and boats and airplanes, to electronic products to educational toys, to food and clothing. They must have strong analytical skills and be detail oriented. In addition, they must work well in team situations as they are often called upon to work in a group setting with other engineers and with others outside of engineering.

In the present era scope of production engineer is huge. Everyone are confused about the course to opt. Usually in multinational companies a production engineer controls a manufacturing department etc. That means mechanical engineers comes under a production engineer. Please don't misunderstand that a mechanical engineer is below a production engineer. It is just that a production engineer with high grade pay always comes top (in the management area). A company cannot run smoothly without the help of production engineers because these engineers deal with everything starting from procurement of raw materials to the processes involved till it reach the market.

Job Prospects

First you have to understand the fact that production B.Tech is equivalent to mechanical B.Tech. So you can apply for mechanical job posts.

A few fields where production engineer get placed are :

- Automobile companies- For inspection, quality control, operation of automated equipments etc.
- Manufacturing industries- For inspection, quality control, operation of automated equipments, to control assembly line, production management etc.
- Food processing industries- For inspection, quality control, Production management etc.
- Railways- Manufacturing processes and its control etc.
- Process industries.
- Space and other research organizations.
- Government and private companies.
- Defense.
- IT companies.

Some of the companies are

1. NALCO
2. SAIL
3. TATA STEEL
4. TCIL

5. TATA MOTORS
6. VOLVO
7. SYNTHITE
8. ONGC
9. FACT
10. ISRO
11. AIRFORCE (TECHNICAL ENGINEER)
12. HAL etc.

Typical work activities

- Oversee daily production issues
- Plan/schedule manufacturing equipment production for the specific industry involved
- Train, lead, and guide production team
- Work closely and buy raw materials from suppliers
- Work with all departments to fulfill delivery requirements

WORK SKILLS REQUIRED

The production engineer possesses a wide set of skills, competences and attitudes based on market and scientific knowledge. These abilities are fundamental for the performance of coordinating and integrating professionals of multidisciplinary teams. The production engineer should be able to:

- **Dimensional and integrate resources.** Usually required to consider physical, human and financial resources at high efficiency and low cost, yet considering the possibility of continuous further improvement;
- **Make proper use of math and statistics** to model production systems during decision making process;
- **Design, implement and refine products, services, processes and systems** taking in consideration that constraints and particularities of the related communities;
- **Forecast and analyse demand.** Select among scientific and technological appropriate knowledge in order to design, redesign or improve product/service functionality;
- **Incorporate concepts and quality techniques** along all the productive system. Deploy organizational standards for control proceedings and auditing;
- **Stay up-to-date with technological developments**, enabling them to enterprises and society;
- **Understand the relation between production systems and the environment.** This relates to the use of scarce resources, production rejects and sustainability;
- **Manage and optimize flow** (information and production flow).

- **Reading Comprehension** — Understanding written sentences and paragraphs in work related documents.
- **Active Listening** — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- **Complex Problem Solving** — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- **Critical Thinking** — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- **Writing** — Communicating effectively in writing as appropriate for the needs of the audience.
- **Speaking** — Talking to others to convey information effectively.
- **Monitoring** — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
- **Judgment and Decision Making** — Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- **Active Learning** — Understanding the implications of new information for both current and future problem-solving and decision-making.
- **Coordination** — Adjusting actions in relation to others' actions.

Abilities

Oral Comprehension — The ability to listen to and understand information and ideas presented through spoken words and sentences.

Written Comprehension — The ability to read and understand information and ideas presented in writing.

Oral Expression — The ability to communicate information and ideas in speaking so others will understand.

Problem Sensitivity — The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.

Written Expression — The ability to communicate information and ideas in writing so others will understand.

Deductive Reasoning — The ability to apply general rules to specific problems to produce answers that make sense.

Inductive Reasoning — The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).

Near Vision — The ability to see details at close range (within a few feet of the observer).

Information Ordering — The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).

Selective Attention — The ability to concentrate on a task over a period of time without being distracted.