

## **Production Engineering – an Engineering branch to be opted for students**

Vidya Academy of Science and Technology is an engineering college conforming to international standards with ISO 9001-2008 certified; approved by AICTE and affiliated to Calicut University and is offering B.Tech courses in Electronics and Communication Engineering, Civil Engineering, Computer Science and Engineering, Electrical and Electronics Engineering, Mechanical Engineering and Production Engineering. M. Tech courses in Power Electronics and Computer Science, MCA are also offered in the institution.

### **What is Production Engineering?**

Production engineering is a combination of manufacturing technology with management science, where as a Production engineer deals with engineering practices and management challenges related to production. Production engineering has wide application in casting, joining processes, metal cutting & tool design, metrology, machine tools, machining systems, jigs and fixtures, die and mould design, automation, CADD/CAM, CIM, Operation Research, Inventory Control, Quality Control, Mechatronics, Robotics, Supply Chain Management and all other management subject related to industries. Production engineering also overlaps substantially with manufacturing engineering and Industrial Engineering. In short, Production Engineering deals 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 Engineering – a core Engineering Discipline**

Even though almost all the engineering courses (Electronics and Communication Engineering, Civil Engineering, Computer Science and Engineering, Electrical and Electronics Engineering, and Mechanical Engineering) are offered in almost all the Engineering Colleges under Calicut University, an exception is the Production Engineering course, which is offered only at Government Engineering College, Thrissur and Vidya Academy of Science and Technology, Thalakkottukara. Acknowledging the importance of Production Engineering in the Industry level, Post graduate courses have also been started in early 1972 itself in Government Engineering college, Thrissur.

Opportunities are available in public and private sector manufacturing organizations engaged in implementation, development and management of new production Process, information and control systems and computer controlled inspection, assembly and handling. *Research and Development* in *Production Engineering* deals with all levels of industrial production and students who seeks higher education have great opportunity in these fields. Production Engineering course covers almost 70 percentage of the portions in Master in Business Administration (MBA) course for engineers, who seeks managerial level jobs.

Production engineering course is having a compulsory Industry based project work for minimum fifteen days and this helps the students to have excellent Industry interaction and training, prior to attend any interviews, particularly for selecting an industry, suitable for them.

## **Production Engineer - a brief review**

Production Engineers possess 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.

Main duties of Production Engineer include 1) Resources Integration - Utilizing resources at high efficiency and low cost, considering the possibility of continuous further improvement. 2) Make use of mathematics and statistics to model production systems during decision making process. 3) Design, implement and refine products, services, processes and systems taking in consideration constraints and particularities of the related communities. 4) Forecast and analyze demand. 5) Incorporate concepts and quality techniques along all the productive system. Deploy organizational standards for control proceedings and auditing. 6) Stay up-to-date with technological developments, enabling them to enterprises and society. 7) Manage and optimize flow (information and production flow).

In all the sense, Production Engineering course (Equivalent to Mechanical Engineering) is considered more relevant and significant than that of Mechanical Engineering, as it fundamentally covers all the related topics in Industry in very elaborate manner, except Marine Engineering and Thermal Power Engineering which are having their own courses in their core level, as Marine Technology and Thermal Engineering itself.

Since enough Production Engineers are not available in the market, Mechanical Engineers are often trained and projected as Production Engineers in the industry.

At Vidya Academy Of Science and Technology, highly qualified and experienced staff with post graduate degree are offering classes in Production Engineering Department. The department has well-equipped laboratories such as 1) Advanced Manufacturing lab. 2) Metrology lab. 3) Production Engineering Lab. 4) Industrial Engineering Lab 5) CAD/CAM lab etc. for the effective accomplishment of the Production Engineering course.

### **WHAT ARE THE JOB OPPORTUNITIES AVAILABLE FOR PRODUCTION ENGINEERING**

**Production Engineering:** Deals 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.

**Job and Scope:** Opportunities are available in public and private sector manufacturing organizations engaged in implementation, development and management of new production Process, information and control systems and computer controlled inspection, assembly and handling.

B. Tech in production engineering has a very huge application in the production sector. The students can also join the core sector and production sector companies. The students can mainly go for the core sector like refinery, automation industry, textile industry etc. They can further pursue M. Tech and then

can go into research. They can also join the teaching profession in various institutions having production or mechanical branch.

### **Career after B. Tech in Production Engineering:**

Production Engineering combines manufacturing technology with the techniques in management science. Candidates can find numerous job opportunities after completing this course. They can find career opportunities in companies located in both India and Abroad based on their interest.

### **Government Career after B. Tech in Production Engineering:**

Professionals in production engineering can find numerous job opportunities in the government sector. Candidates can apply for these jobs by qualifying certain exams conducted by the government. Some of the organizations that conduct these exams are PSCs, SSC, UPSC, Defence Services etc. Major government sector organizations recruiting graduates in production engineering include Bharat Earth Movers Limited, National Thermal Power Corporation (NTPC), Steel Authority of India Limited (SAIL), Oil and Natural Gas Corporation (ONGC), Airport Authority of India (AAI), Hindustan Aeronautics Limited (HAL), Engineers India Limited (EIL), etc. At an initial stage itself candidates can earn around Rs 20, 000/- per month in these organizations. Experience is important to draw better pay packages.

### **Career in Private Sector after B. Tech in Production Engineering:**

Many reputed private sector organizations working in the field of automobile, logistics, and transportation recruit graduates in Production Engineering. Graduates can also find jobs in many of the software companies in the private sector. Fresher can join these companies as Junior engineers. Software companies recruiting Production Engineering graduates include Accenture, IBM, Infosys Technologies Limited; Microsoft, Oracle, Samsung India Software Operations, Siemens, Tata Consultancy Services, Wipro Technologies Ltd etc. Candidates can also find numerous job opportunities in different sectors like oil industries, mining industries, fertilizers etc. They can also find jobs in any of the private engineering colleges offering this course. Candidates can earn in the range of Rs. 15,000/- to Rs. 30,000/- per month in private sector.

### **Career Abroad after B. Tech in Production Engineering:**

Production engineers can find abundant career opportunities in abroad also. Many companies working in the field of oil, gas, fertilizers, automobiles etc. in countries abroad recruit graduates in production engineering. These organizations provide the graduates with better remuneration. They can earn in the range of Rs. 75,000/- to Rs. 1, 50,000/- per month .

Candidates can also go for higher studies. This increases their job prospectus.

### **Higher study options after B. Tech in Production Engineering:**

List of different higher studies options available after B. Tech in Production Engineering is given below

- Master of Engineering Advanced Production System
- Master of Engineering in Production Engineering
- Master of Technology in Production Technology and Management
- Master of Technology in Product Design and Manufacturing
- Master of Technology in Production and Industrial Engineering
- Master of Technology in Production Engineering and System Technology
- Master of Technology in Production Engineering
- Master of Technology in Production Management
- Master of Technology in Production Technology
- Master in Quality and Productivity Management
- Master of Business Administration in Production and Materials Management
- Master of Business Administration in Production Management
- Master of Science in Production Engineering
- Post Graduate Diploma in Production Management
- Post Graduate Diploma in Radio Programme Production

### **Subjects covered under Higher Studies after B. Tech in Production Engineering:**

Some of the subjects covered under the higher studies after B. Tech in Production Engineering are Machining Science, Metrology and Computer Aided Inspection, Metal Forming Advanced Optimization Techniques, Mechatronics, Machine Tool Design, Computer Integrated manufacturing Systems, Production design, Quality Control, Plant location, Lay out of facilities, Store keeping and warehouse management, Dynamic purchasing and Material Management.

### **Career opportunities after Higher studies in Production Engineering:**

Those who have higher degree or diploma in production engineering can find different job opportunities in the manufacturing industries. They can work as plant engineers, manufacturing engineers, quality engineers, process engineers or industrial managers. They can also work in various industrial automation units. Candidates who possess MBA in the related field can apply for the posts available in the administrative section of the manufacturing industries. These are higher posts which have higher reputation and salary.

Candidates having higher degree or diploma in any field related to production engineering can find ample job opportunities in Armed Force, Railways and different government departments

### **Qualification Criteria for Higher Studies after B. Tech in Production Engineering:**

Various higher degree or diploma courses are available for the candidates who have completed bachelor of technology course in Production Engineering. Those who want to pursue Master of

Engineering or Master of Technology courses should qualify Graduate Aptitude Test in Engineering (GATE). Most of the technical institutions insist GATE score for the admission to various post graduation courses in engineering. Candidates who have completed any graduation can apply for any MBA course. They should also qualify the concerned entrance test to get admission to the desired MBA course. Graduation is required to apply for higher diploma courses.

### **Importance of B. Tech in Production engineering in the present era:**

The course of B. Tech in Production Engineering has been creating various applications that are ideally suitable in the modern era. The course in the instances provided the proper initiatives that help the candidates to achieve a stable platform within the proper sphere. Thus the importance of the course has greatly increased and in the process provided the candidates with the opportunity to strike high in the career oriented aspects.

The course has also helped the candidates to achieve various breakthroughs in different production based industries. The course especially in the B. Tech level provided the necessary goals as well as important roles that have helped the candidates to provide proper as well as attractive spheres within the various core based industries. The importance of the course lies in the fact that it is creating the kind of application that was long required from other core based courses within the production industry. The candidates have also been motivated in the right direction and created the ideal shift that was needed to boom the job aspects in the core based production industry. Thus looking at the different aspects, we can see the general importance of the course in the long run prospects.

Generally, the course of production engineering at the bachelor level is creating new spheres that are required in by the people that would help to create the overall proper aspects within these core based industries. Therefore the importance of the course has increased in the modern era.

### **Role of Production engineering in today's world:**

Production Engineering in today's world is a blooming course and has several vital applications that can be utilized in the core based field of production. The course in both the master as well as the bachelor level degree offer ample opportunities both nationally and internationally. However, production engineering has critical role to play in the present era.

Production engineering is a completely production oriented course. The quality of the products produced is to a large extent dependent on production engineering and with quality comes standard. Therefore the production engineering lands in the standard arena which in turn is related to the price control chains. Thus the course in turn is influencing the delicate balance of demand-supply chain which is very critical in the present world. The list of influenced factor is very long, thus these facts alone creates the opportunities to understand the role of production engineering in the present world.

The complex role does not end with the chains. Production engineering is to some extent responsible for the health of the society and this role is vitally played in the edible material production houses. Bad

quality of any of these products is a direct indication of the bad health of the society. Therefore the influence wing of the production engineering has reached to this level.

Thus the course of the production engineering has a crucial role to play in today's world. These related aspects makes us acquainted of the enormous influence the course carry in our day to day lives.

Reference:

<http://entrance-exam.net/>