



LIFE AS A

INSTRUMENTATION ENGINEER

WORK SKILLS, INTEREST & COMPETENCIES

**I
N
S
T
R
U
M
E
N
T
A
T
I
O
N**

Introduction

Instrumentation engineering is specialized branch of engineering, which focuses on the principle, and operation of measuring instruments, process control which are used in design and configuration of automated systems. These engineers work for industries with automated processes, such as chemical or manufacturing plants, with the goal of improving system productivity, reliability, safety, optimization and stability.

Job Prospects

Instrumentation engineers can get jobs in R&D units of public and private sector companies. They are also required by the Heavy industries such as Thermal Power Stations, Steel Plants, Refineries, and Cement and Fertilizer Plants both in Govt. and private sectors like N.F.L., BHEL, Honeywell, Samsung, IOCL, and SAIL. They have a multidisciplinary role to play. One may choose to move sideways into other career areas either within or outside their industry. This might include areas such as purchasing, sales, marketing, finance, IT or general management.

As per the National Forecast up to year 2015, with so many industries coming up need of Instrumentation Engineers is eventually going to increase, as thousands of them are required.

Many IT sector companies like TCS, Infosys, Accenture are hiring students for campus placement, Robotics is another vast field where there is huge need of Instrumentation engineers.

Typical work activities

A instrumentation engineer is essentially responsible for designing, developing, installing, managing and/or maintaining equipment which is used to monitor and control engineering systems, machinery and processes. Instrumentation engineers ensure that these systems and processes operate effectively, efficiently and safely. They usually work for the companies who manufacture and supply the equipment or for the companies who use it, such as nuclear and renewable energy companies and environmental agencies.

Instrumentation engineers need a thorough understanding of the operational processes of an organisation. They have a multidisciplinary role, working closely with colleagues across a number of functions, including operations, purchasing and design.

Instrumentation engineers develop skills in specific control disciplines such as advanced process control (APC), distributed control systems (DCS), programmable logic controllers (PLC), and supervisory control and data acquisition (SCADA). The use of these disciplines will depend on the exact nature of individual job roles.

In general however, tasks and responsibilities can include:

Tasks and responsibilities, which are common to instrumentation engineers, may include:

- Designing and developing new control systems;
- Maintaining and modifying existing systems;
- Managing operations;
- Working collaboratively with design engineers, operation engineers, purchasers and other internal staff;
- Analyzing data and presenting findings in written reports;
- Contacting clients, suppliers, contractors and relevant authorities
- Project management within cost and time constrained environments;
- Troubleshooting and problem-solving;
- Understanding and ensuring compliance with the health and safety regulations and quality standards
- Providing advice and consultancy support;
- Purchasing equipment;
- Writing computer software;
- Developing new business proposals

WORK SKILLS REQUIRED

As an instrumentation Engineer, you need to demonstrate a range of skills and aptitudes covering the following:

- Creative problem-solving and troubleshooting skills;
- Excellent critical thinking skills
- Good at maths and physics
- Skilled at handling instruments and software
- Adept at trouble-shooting
- A high level of attention to detail;
- An understanding of, and ability to work with, high-level computer technology.
- Have leadership qualities
- Good communication and interpersonal skills;
- Strong team-working skills, with an ability to motivate others and to lead or manage teams and projects;
- Flexibility and an ability to compromise;
- A willingness to accept responsibility and make decisions;:
- Excellent customer care skills and good commercial awareness;