

# **Essential Requirements for an Engineer in Industry**



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# Definition of Engineering



Engineering is the application of Science for the common purpose of life.

# Definition of Engineering



On the one hand professionals like engineers any some time do things with which they do not completely agree with normally.

# Definition of Engineering



On the other hand professionals are supposed to be independent moral agents and not just guns for hire.



# Social Responsibilities of Engineers



- A commitment from the engineering profession.
- Due regard for the well being of others and impact of their work on society.
- Determination to discover all the facts that may positively and negatively affect/impact society.

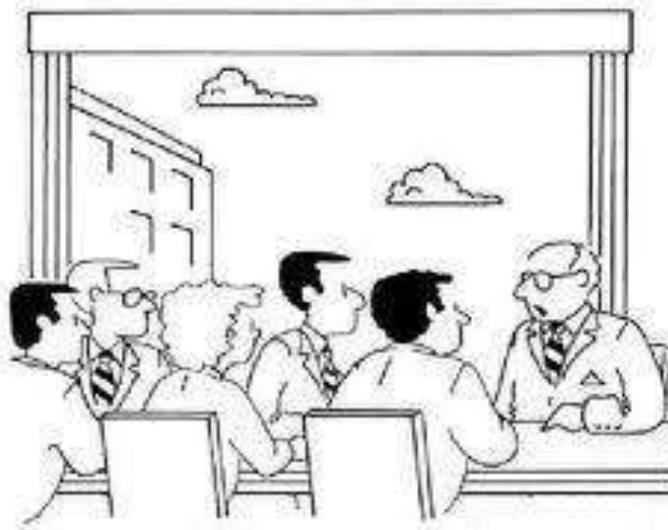


# Social Responsibilities of Engineers



- Responsibility to think about the interaction of technology and society.
- Engineering is a true profession.
- Engineer deals only in objectives facts.

# Social Responsibilities of Engineers



- Engineers have decision making anatomy and power.
- Engineer is organization man.
- Follow code of ethics by Professional organizations.

# Professionalism

A professional is one who is duly qualified in a specific field.

Also professed:

- A free act of commitment
- Knowledge and skill
- Follow code of ethics





# Requirements of Engineers in Industrial Sector

**A. Engineer while entering in any organization have to look for five major issues.**

- 1) Plants and its operation
- 2) Organization and its management
- 3) Availability of Resources
- 4) Human resources available for achieving the objective assigned.
- 5) Financial constraints and problems which originate from the local infrastructure of logistics.



# Change Views as per Assign Jobs

Generally two types of jobs are assigned to Engineers.

## A. Maintenance

- a) Study of Maintenance failure
- b) Total Productive Maintenance
- c) Organizational Objectives





# Change Views as per Assign Jobs

## B. Sales

- a) Customer Behavior
- b) Technical Know How
- c) Knowledge of Competitors.

Generally R & D contribution is very less as compared to role of engineer in maintenance and sales.

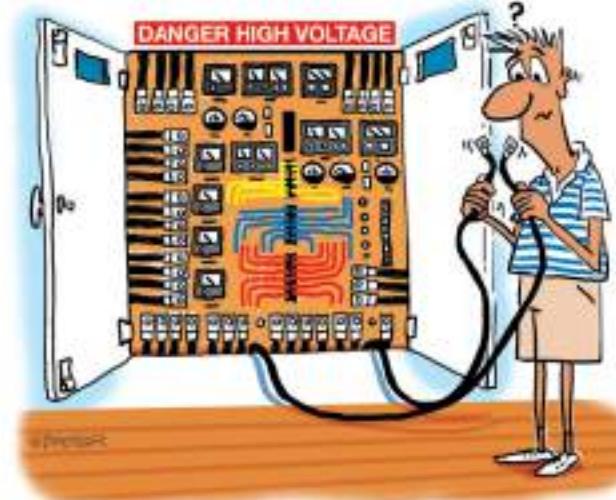


# Plants and Its Operations

Engineer should focus on objective and desired out comes.

**This may result in:**

- a) Savings
- b) Optimization of Goals
- c) Accountability and Governance
- d) Minimize Risk
- e) Selection of Priorities



# Plants and Its Operations

**Therefore you should:**

- a) Understand working environment
- b) Recognize stake holders
- c) Develop Leadership skill
- d) Knowledge of tools and techniques



# The Core Challenges are:

- Requirement Assessment
- Success Initiative
- Scope of Endeavors



# The Core Challenges are:

- Needs Requirement
- Efficient Management and Control
- Satisfaction of stake holders



# Engineers should understand:

- Complexity of environment
- Environmental Constraints
- Stake holder changing expectation



# Engineers should understand:

- Creation in approach
- Accountability and Governance
- Dynamic to change



# Your Frame Work

- Work is predictable
- Schedule are followed
- Issues are addressed proactively
- Define Goals



# Your Frame Work

- End user confidence in delivery
- Identifies of functional responsibilities
- Minimize the need for continuous reporting
- Measures accomplishment versus plan





# Frame Work

- Define problem and find out alternative solution
- Select an optimum solution
- Learning an academic concentrate on problem definition and solution finding

# If you do not perform the risk are:

- Emergencies of unintended consequences
- Misalignment of Priorities and resources
- Loss of optimization
- Misalignment direction of initiatives
- Objective not achieved
- Stake holder dissatisfied





# If you follow the right path you will be benefitted by



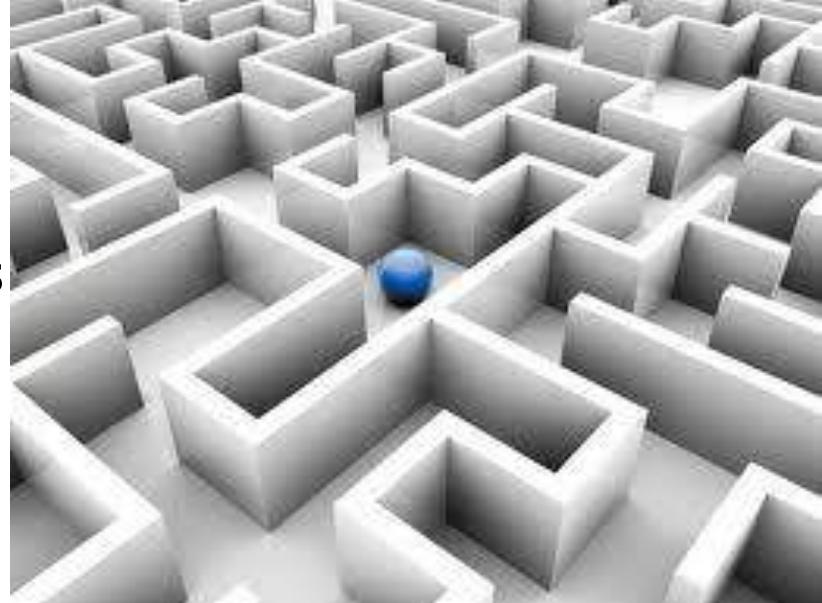
- 1) Good Accountability and Governance
- 2) Easy tracking
- 3) Measured Performance
- 4) Easy Channels of Communication





# If you follow the right path you will be benefitted by

- 5) Easy flow of information
- 6) Easy understanding of status
- 7) Team work and collaboration
- 8) Discovery and Learning



If you follow the wrong path consequence will be fire from job.



# Role of Academia for the readiness of Engineers



- Standard and Codes to be part of academic education
- In addition to improving the technical skills engineering management with economic consideration to be essential part of academic education
- Industrial internship to be integral part of engineers last semester.



# Role of Engineers in preparing for Professional Joining



- Engineers should give due consideration to stakeholders interest
- Problem solving approach with economic consideration shall be the best approach for solution of industrial problems
- Follow the standard codes in daily practices
- Show professional approach while dealing with day to day activities
- Discuss problems with management, well equipped with logical and professional reasoning
- Don't shy away from communicating.



# Questions are Welcomed



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Thanks