

# INDUSTRIAL MANAGEMENT

ENIE 202

**Lecture** : 3  
**Tutorial** : 1  
**Practical** : 0

**Year** : II  
**Part** : I

## **Course Objectives:**

The objective of this course is to provide knowledge of design and management of manufacturing and service activities by implementing industrial management skills to the students and make them successful entrepreneurs and managers.

## **1 Introduction (5 hours)**

- 1.1 Concepts and definitions of management
- 1.2 Management as a process; coordination, and function
- 1.3 Five M's in the business: Man, machine, materials, money, and methods
- 1.4 Functions of management: Planning, organizing, staffing, directing, coordinating, motivating, and controlling
- 1.5 Management levels and skills
- 1.6 Importance of industrial management and future challenges

## **2 Organization and Management (7 hours)**

- 2.1 Organization
  - 2.1.1 Definitions, functions, and principles of organization
  - 2.1.2 Developing organizational structure: Functional organization, discipline-based organization, product/region-based organization, matrix organization, project organization, team organization, informal and network organization
- 2.2 Management
  - 2.2.1 Evolution of management thoughts
  - 2.2.2 Classical approach (Scientific management and administrative management)
  - 2.2.3 Behavioral approach
  - 2.2.4 Quantitative approach
  - 2.2.5 System perspective
  - 2.2.6 Contingency approach
  - 2.2.7 Information technology approach, and beyond
- 2.3 Enhancing corporate performance

### **3 Leadership, Communication, and Decision Making (7 hours)**

- 3.1 Leadership
  - 3.1.1 Leader and manager
  - 3.1.2 Characteristics of leadership, functions of a leader, leadership styles and skills
  - 3.1.3 Approaches to leadership: Traits approach, behavioral approach, and contingency approach
- 3.2 Communication
  - 3.2.1 Process, nonverbal communication and its aspects
  - 3.2.2 Organizational channels and directions of communication
  - 3.2.3 Barriers to communication and overcoming barriers
  - 3.2.4 Conduction of effective meeting
- 3.3 Decision-making
  - 3.3.1 Elements of decision making
  - 3.3.2 Decision-making process: Rational process, specific rational tools, additional support tools, decision-making by gut instinct, decision-making in team
  - 3.3.3 Principles of decision-making, types of decisions, and characteristics of a good decision

### **4 Production and Operations Management (10 hours)**

- 4.1 Business operations as a point of departure
  - 4.1.1 Value propositions of goods and services
  - 4.1.2 Value creation and value capture
  - 4.1.3 Business operation in value chain
  - 4.1.4 Efficiency, effectiveness, productivity, profitability, outsourcing, insourcing, offshoring, and reshoring
- 4.2 Production and product development
  - 4.2.1 Production under different conditions
  - 4.2.2 Production strategy
  - 4.2.3 Tactical production management and operational production management
  - 4.2.4 Product development and innovation strategy of the company
  - 4.2.5 Tactical level of product development
  - 4.2.6 Operational level: Methods and techniques

**5 Marketing Management for Engineering Managers (10 hours)**

- 5.1 Introduction
  - 5.1.1 Marketing in different markets
  - 5.1.2 Traditional difference between business and consumer markets
- 5.2 Strategic marketing
  - 5.2.1 Market segmentation and product portfolio
  - 5.2.2 Brands, relationship between product, brand, and value proposition
- 5.3 Tactical marketing
  - 5.3.1 Pricing and pricing models
  - 5.3.2 Distribution channels and promotion
  - 5.3.3 Competitive tools in marketing: The marketing mix
- 5.4 Operational marketing and sales
  - 5.4.1 Different marketing approaches
  - 5.4.2 Market research, analysis, and plans
  - 5.4.3 Sales process and marketing organization

**6 Human Resource Management and Motivation (6 hours)**

- 6.1 **Engineering employees:** Selection process, soft skills, character
- 6.2 **Human resource development:** Employees, successors, leading changes
- 6.3 **Motivation**
  - 6.3.1 Methods of motivation
  - 6.3.2 Maslow's hierarchy of needs
  - 6.3.3 Theories of motivation: Herzberg's two-factor theory, Equity theory, Victor Vroom's expectancy model, Goal setting theory, X and Y theory
  - 6.3.4 Specific techniques to enhance motivation

**Tutorial (15 hours)**

- 1. Necessity of industrial management, management process and skills
- 2. Design of different types of organization structures according to industry
- 3. Cases on problem identification and decision making process involve in different situation arise in an industry. Suitability of leadership approaches in different industrial organizations
- 4. Cases on value creation (Product/service), value capture and product/service development process. Strategic, tactical and operational level methods and techniques of POM in industries
- 5. Marketing skills and strategies of products/ service in different types of markets
- 6. Human resource management in industrial organizations

**Assignment**

- 1. Self-assessment questions
- 2. Case studies analysis

### 3. Summarization of related articles

#### Final Exam

The questions will cover all the chapters in the syllabus. The evaluation scheme will be as indicated in the table below:

<b>Chapter</b>	<b>Hours</b>	<b>Marks distribution*</b>
1	5	7
2	7	9
3	7	10
4	10	13
5	10	13
6	6	8
<b>Total</b>	<b>45</b>	<b>60</b>

\* There may be minor deviation in marks distribution.

#### References

1. Martand, T.T. (2018). Industrial Engineering and Production Management. S. Chand Publishing.
2. Chang, C.M. (2016). Engineering Management: Meeting the Global Challenges. Taylor and Francis Group.
3. Khanna, O.P. (1995). Industrial Engineering and Management. Dhanpat Rai and Sons.
4. Engwall, M., Jerbrant, A. (2017). Modern Industrial Management. Studentlitteratur, Lund.
5. Nahmias, S., Olsen, T.L. (2015). Production and Operations Analysis. Waveland Press, Inc.