Industrial Engineering

Puget Sound Chapter of the
Institute of Industrial & Systems Engineers
(IISE)

What Most Industrial Engineers (IEs) Do

- Depending on the type of industry, they may do some or all of the traditional Industrial Engineering (IE) activities:
  - Process Improvements
  - Facility Planning & Layout
  - Inventory Control & Inventory Management
  - Production Control & Shop Floor Control
  - Standard Data Development & Time Studies
- Some do Consulting work
- Some do Research in a lab environment
- Some teach at Engineering schools

Industrial Engineering

Types of Industries Industrial Engineers Work In

- Aluminum & Steel
- Materials Testing
- Ceramics
- Electronics Assembly
- Aerospace & Airplanes
- Plastics & forming
- Shipbuilding
- Entertainment
- Military
- Construction
- Forestry & Logging
- Mining
- Hospitals
- Banking
- State & Federal Government
- Transportation
- Oil & Gas
- Insurance
- Consulting

Some Types of Industrial Engineering Projects

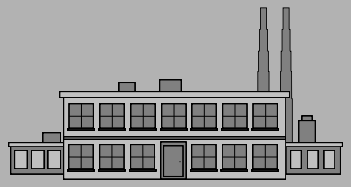
- Process improvement
- Problem resolution
- Elimination of rework
- Cost analysis
- Equipment justification
- Facility layout
- Stand alone benchmarking
- Systems integration

Industrial Engineering Functional Work Areas

Project Management

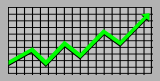
- Project Planning
- Project Scheduling
- Projects Coaching
- Risk Assessment

Factory Operations



- Production Scheduling
- Lean Manufacturing
- Systems Integration

Quality



- Chronic Rework
- Supplier Quality

Production Control

- Product Mix Analysis
- Forecasting

Material

- Supplier On-Site Visits
- Supply Chain Management
- Parts Storage & Movement

Facilities

- Layout Design
- Process Flow Analysis

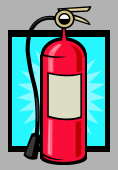
Product Engineering

- Integrated Product Teams
- Product Development
- Product Costing

Costing

- Comparison of Alternatives
- Cost & Savings Estimating

Safety



- Safety Investigations
- Ergonomic Evaluations

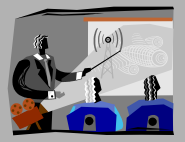
Tooling

- Machine Capacity
- Tool Usage
- Tool Certifications

Transportation

- Logistics Planning
- Material Handling
- Alternative Methods

Training



- Training Presentations
- Course Scheduling

Main Areas Industrial Engineers Work In

DIRECT SUPPORT to PRODUCTION

- Production Scheduling
- Defect Analysis
- Benchmarking Analysis
- Crew Empowerment
- Budgets & Forecasts
- Theory of Constraints

OPERATIONS IMPROVEMENT

- Operating Plans
- Recovery Planning
- Capacity Planning
- Ergonomics & Human Factors

PROCESS IMPROVEMENT

- Root Cause Analysis
- Time Studies
- Work Sampling
- Statistical Methods
- Lean Manufacturing
- Six Sigma
- Process Modeling
- Engineering Economic Analysis

INTEGRATED SYSTEMS

- Facilities Layout
- Value Stream Analysis
- Production System Design
- Manufacturing Process Design
- Systems Thinking
- Simulation

MANAGE PROJECTS

- Project Management
- Project Scheduling
- Risk Management

SUPPLY CHAIN ANALYSIS

- Material Logistics
- Inventory Control
- Supply Chain Alignment
- Supplier Support
- Make/Buy Analysis

Future Prospects for Industrial Engineers

- Many Industrial Engineers still work in traditional manufacturing industries
- Very good prospects in the Service Industries including Health Care Industry
- Many industries still discovering the potential that IEs can offer their organizations