

# Industrial Engineering (text from Wikipedia)

Industrial engineering is an engineering profession that is concerned with the optimization of complex processes, systems, or organizations by developing, improving and implementing integrated systems of people, money, knowledge, information and equipment. Industrial engineering is central to manufacturing operations.

Industrial engineers use specialized knowledge and skills in the mathematical, physical, and social sciences, together with engineering analysis and design principles and methods, to specify, predict, and evaluate the results obtained from systems and processes. Several industrial engineering principles are followed in the manufacturing industry to ensure the effective flow of systems, processes, and operations.

These include:

- Lean Manufacturing
- Six Sigma
- Information Systems
- Process Capability
- Define, Measure, Analyze, Improve and Control (DMAIC).

These principles allow the creation of new systems, processes or situations for the useful coordination of labor, materials and machines and also improve the quality and productivity of systems, physical or social. Depending on the subspecialties involved, industrial engineering may also overlap with, operations research, systems engineering, manufacturing engineering, production engineering, supply chain engineering, management science, engineering management, financial engineering, ergonomics or human factors engineering, safety engineering, logistics engineering, quality engineering or other related capabilities or fields.