

Session 1 HISTORY OF MECHANICAL ENGINEERING

OVERVIEW

Industrial engineering is a branch of engineering which deals with the optimization of complex processes or systems. It is concerned with the development, improvement, implementation and evaluation of integrated systems of people, money, knowledge, information, equipment, energy, materials, analysis and synthesis, as well as the mathematical, physical and social sciences together with the principles and methods of engineering design to specify, predict, and evaluate the results to be obtained from such systems or processes. While industrial engineering is a traditional and longstanding engineering discipline subject to (and eligible for) professional engineering licensure in most jurisdictions, its underlying concepts overlap considerably with certain business-oriented disciplines such as operations management.

ENGINEERING IS...

- The profession in which knowledge of the mathematical and natural sciences, gained by study, experience, and practice is applied with judgment to develop ways to use, economically, the materials and forces of nature for the benefit of mankind.
 - The Accreditation Board of Engineering & Technology (ABET)

The Speed of History

Rate at which we currently introduce innovations is far more rapid than in the past

FOUNDATIONS OF ENGINEERING

- Early civilizations examined their environments & saw areas where life could be easier
 - Improved fishing, hunting
 - Better shelter
 - Better weapons

HISTORIC BACKGROUNDS

- Civil
 - Civil Engineering is to design systems that are functional, efficient, & durable
 - Ancient Egyptians used surveying for flood predictions
 - Romans measured & marked land, laid out aqueducts & designed roads
 - Bridges
 - Dams
 - Roads
 - Tunnels
 - Water
- Industrial

- Industrial Engineer's main role is to combine workers, machines, and materials to increase productivity & reduce waste
- Tribal cultures created more efficient tools & made best use of people's specific skills
- Early machines used in Industrial Revolution created by innovators would be in this category
- Drills, lathes, crankshaft, water wheels, steam engines, etc.
- Mechanical
 - Concerned with machines & mechanical devices
 - Involved in the design, development, production, operation & service of these devices
 - Chariots
 - Boats
 - Trains
 - Bicycles
 - Automobiles