MENG 344 Work Analysis and Design

Overview of IE

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What is Industrial Engineering?

IE is the engineering discipline is concerned with planning, organizing and operating industrial facilities and processes for the economic, safe, and effective use of physical and human resources.

What is Industrial Engineering?

Industrial Engineering is concerned with the analysis, design, improvement, installation and management of integrated systems of people, finances, materials, equipment, energy and information. It draws upon specialized knowledge and skill in the mathematical, physical, physiological, social sciences and now electronic communications together with the principles and methods of <u>engineering analysis and design</u> to specify, predict and evaluate the results to be obtained from such systems and measure achievement.
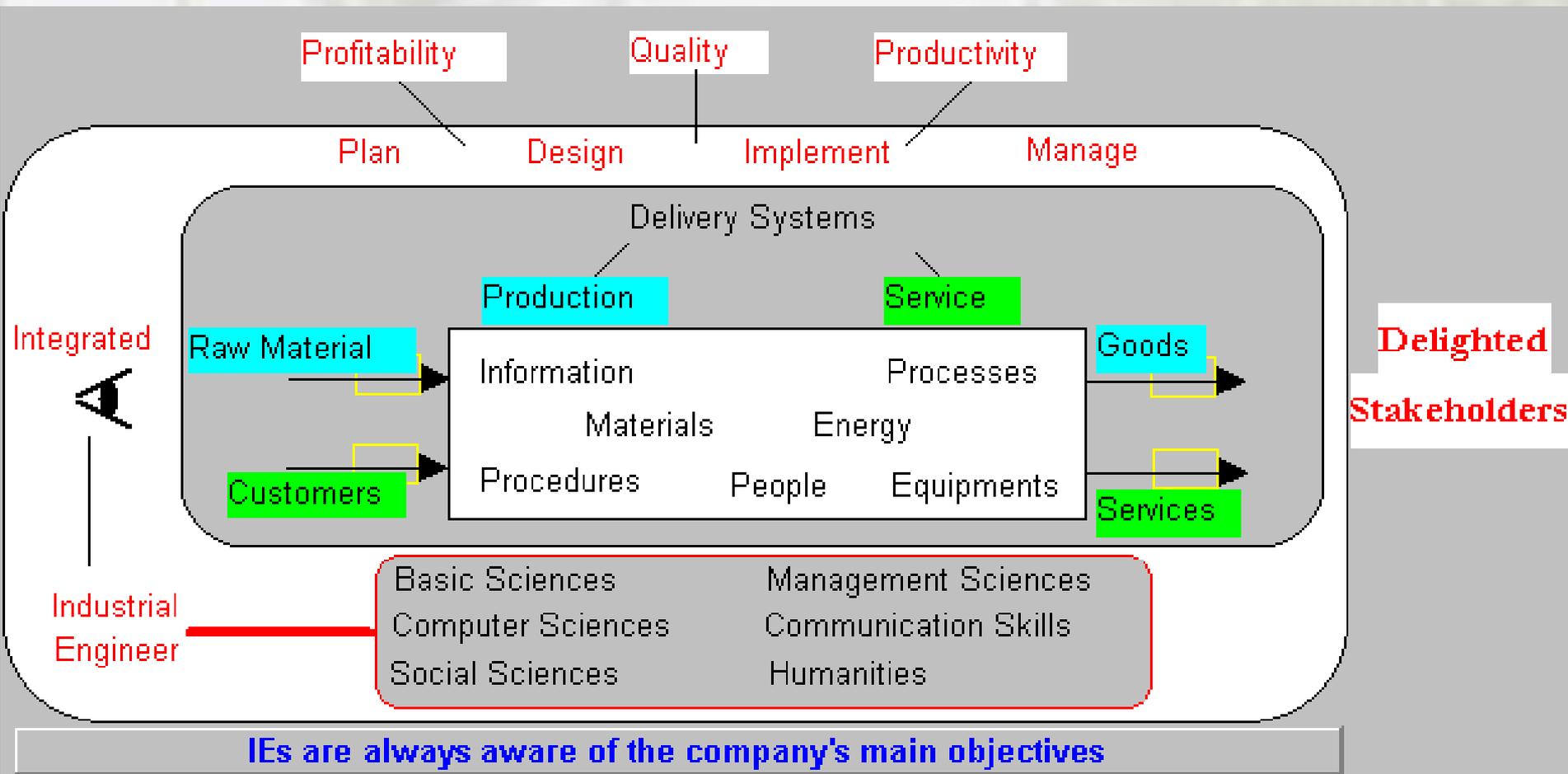
IIE

What is Industrial Engineering?

Industrial Engineering is an aspect of engineering science devoted to getting the best results from available resources, provided always safety, quality, timeliness, costs and human satisfaction are met.

IE is geared to promoting Continuous Improvement and <u>Best Operating Practices</u> within organizations.

IIE

What is Industrial Engineering?

What is Industrial Engineering?

➢ More concerned with the way things are done than the actual design.

➢ Systems approach.

➢ System may involve manufacturing, services, healthcare, or agriculture

➢ Maximize outputs from specified inputs

Role of the Industrial Engineer

<u>Task Methods</u>	Simulation
<u>Time & Motion</u>	Material Handling
<u>Ergonomics</u>	Business Planning
Layout	Information Systems
Product Costing	SPC
Budget Preparation	Packaging

Emphasis on quantitative skills

Coach/trainer/catalyst

Umbrella Vision of the Organization
Conceptual Skill
Focus on the System

Marks of a Good Engineer

➢ effective communicator,

➢ efficient problem solver,

➢ life long learner,

➢ critical thinker,

➢ able researcher,

➢ independent learner,

➢ team player,

➢ effective manager,

➢ self motivated,

➢ ethical and socially aware, and

➢ thinks outside the boundary

Soft Skills

'Soft' skills include the ability to:

➢ Communicate,

➢ Motivate,

➢ Lead

➢ Delegate, and

➢ Negotiate.

'Soft' skills have strong elements of self-knowledge, self-discipline and self-management.

It should be stressed that some of these 'soft' skills are actually quite deep and sophisticated abilities.